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AUTHOR Goldman, Nancy T.
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ABSTRACT

Intended for gifted/talented staff members, the document provides a collection of curriculum ideas and suggestions for activities, books, and articles related to education of gifted and talented children. Included are materials (outlines, tables, diagrams, and articles) on the following topics: facts about famous individuals; introduction of higher level thinking skills at upper and lower grade levels; the enrichment triad model; vocabulary development; the Astor program for 4- to 6-year-old gifted children; development of thinking skills through creative learning centers; setting up a classroom library; classroom-tested teaching ideas; high-quality, low cost learning materials; suggestions for teaching reading and mathematics; and a list of resource materials on program planning and evaluation, curriculum aids, materials for parents of gifted children, and standardized test/instrument suggestions. (SBH)

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ANTHONY J. ALVARADO
COMMUNITY SUPERINTENDENT

ALICIA RODRIGUEZ, PRESIDENT
COMMUNITY SCHOOL BOARD 4

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GIFTED/TALENTED

Curriculum Bulletin No. I

Getting Started

October, 1977

NANCY T. GOLDMAN
COORDINATOR, GIFTED/TALENTED

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FOR CURRICULUM

COMMUNITY SCHOOL DISTRICT 4
346 EAST 117TH STREET
NEW YORK, NEW YORK 10035

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October, 1977

AN OPEN LETTER

TO ALL GIFTED/TALENTED STAFF MEMBERS IN COMMUNITY SCHOOL DISTRICT 4:

Welcome back! I hope you had a healthy, happy summer.

Are you ready to begin?

We are about to embark on a real adventure together - the most exciting, challenging year of our careers! I will try to provide you with as much help and support as I can. I will be providing curriculum ideas for you on a monthly basis, as well as suggested books to buy, trips to take, people to come into your class, articles of interest to read.

We will be meeting together on a regular basis (as IGC/SPE staffs at the individual schools, district-wide by grade level, individually on your prep). School staff meetings have already begun.

You will be able to meet that requirement to continue to take courses in various subject areas and in the area of gifted and talented education by attending the fall course at the Hunter Teacher Center which is on Tuesdays from 3-5 P.M. in the Library at the Hunter College Campus Schools (Park Avenue and East 94th Street). You may take this course for credit (payment to Hunter) or you may attend for free (non-credit). I am also planning to give an in-service course this year (to start in Nov.), which will meet that requirement. I am planning to ask IGC/SPE staff members to give workshops in their area of expertise in that in-service course. By the way, I am attending the Teacher Center course.

The THINK Program for the Gifted from Innovative Sciences, Inc. is being used this year on an experimental basis by the fifth grade IGC classes at P.S. 72, 155, and 206. We will evaluate the program at the end of the year and order more extensively for the following year if the program is successful.

I have available for each school staff copies of the following National/State Leadership Training Institute (N/S-LTI) publications, which I can loan you on a monthly basis:

-Excerpts "Gifted and Talented: A Handbook for Parents"

-Excerpts "Identification of the Gifted and Talented"

-Guide Toward Better Teaching for the Gifted

-Guidebook for Evaluating Programs for the Gifted and Talented

-Parents speak on Gifted and Talented Children

-Promising Practices: Teaching the Disadvantaged Gifted

-Providing Programs for the Gifted and Talented

For those of you who were not involved in the training by the N/S-LTI at Teachers College, Columbia in June, we received a congratulatory letter from Sandra Kaplan (author of Providing Programs above) stating that she was "overwhelmed" with the accomplishment of our team. You will see on the cover of The Higher Level Thinking Kit the names of our district's participants. (If you do not have a copy of this kit, let me know.) We are placing emphasis this year on the skills involved in ANALYSIS, SYNTHESIS, and EVALUATION as well as KNOWLEDGE, COMPREHENSION, and APPLICATION. You may recognize these categories as the Levels of Thinking from Bloom's Taxonomy.

DID YOU KNOW THAT . . . . . .

Facts You May Not Have Known About Some of the World's "Contributors"

WINSTON CHURCHILL failed sixth grade?

CARUSO's parents wanted him to be an engineer; his teacher said he had no voice at all and could not sing!

WERNER VON BRAUN failed ninth grade algebra!

LEO TOLSTOY flunked out of college.

LOUISA MAY ALCOTT's family suggested that she find work as a seamstress or servant. An editor told her she could never write anything with popular appeal.

WALT DISNEY was fired by a newspaper editor for lack of good ideas!

THOMAS EDISON's teachers said he was too stupid to learn anything.

EINSTEIN did not speak until he was four years old and didn't read until he was seven!

ISAAC NEWTON did very poorly in grade school.

MADAM SCHUMANN-HEINK was advised by Vienna's Imperial Opera director to buy a sewing machine because she would never be a singer!

F.W. WOOLWORTH's employers at the dry goods store said he didn't have enough sense to wait upon customers.

_____ doesn't belong in your class.
Or does he/she?

HOW DO WE INTRODUCE THE HIGHER LEVEL THINKING SKILLS?

IF YOU TEACH AN UPPER GRADE . . . . . .

Try to give the kids in your class the whole conceptual model; i.e., that in order to think, we have to know six different things. List them on the board and explain that this is one person's way of explaining what goes into thinking. Other people who have studied the way the brain works may explain it a bit differently. According to Benjamin Bloom, the six levels of thinking are:

EVALUATION

SYNTHESIS

ANALYSIS

APPLICATION

COMPREHENSION

KNOWLEDGE

Ask them if they recognize any of those words. They will probably recognize comprehension and be able to explain it. They will also recognize knowledge. Make sure you point out KNOW in knowledge. To have knowledge you must know many things. In order to think, you must know many things also. In fact, these six levels are like a house. If you don't have that bottom floor or foundation(Knowledge), you can't continue to build. You need to know a lot of different things, so that you have those things to think about.

Explain that in every one of those six categories, there are 15 or 20 behaviors or things we do in order to do those six things. Remind them that in the past when they have been working on reading comprehension, they had to know how to find the main idea, how to put things in the correct order, how to figure out meanings of words from other words around, and many other things.

We are going to begin with ANALYSIS because they have not had much practice with the top three. There are 19 different behaviors that make up analysis. When they know how to do all 19, they they will know how to ANALYZE (compare with analysis). We are going to do one of the 19 behaviors in analysis each week. As a matter of fact, it will be on the board in the morning as a "Do Now" so they will get plenty of practice.

IF YOU TEACH A LOWER GRADE.....

I would give them the conceptual model in a much simpler way. Ask them to tell you how many things you have to be able to do to cook, for example. They will probably tell you:

to read recipes
to turn on the stove
to mix with a beater
to buy the ingredients
to stir with a spoon
and many others

Tell them thinking is the same. It takes knowing how to do many types of things in order to think. One of the things it takes is a difficult word which you're going to put on the board:

ANALYSIS

Tell them it's difficult to pronounce that word until you know how. Does anyone want to try to do it? Are there any words in it they already know?

Pronounce the word. Tell them you're not going to tell them the meaning of the word. You're going to teach them what they have to do in order to analyze or make an analysis. There are 19 things and we're going to study one of the things each week. Then they will know how to analyze.

YOU DECIDE.....

With some classes, it works better if you introduce the skill during the day, explain the word or look it up in the dictionary, give an example, etc. With others, you can introduce it initially as a "Do Now" on the board to be done when they first come into the room in the morning.

I have made up four sample "Do Now" examples for each skill for the next five weeks (through October). Use them or make up others, whichever you wish. I hope they at least get you to think.

WEEK OF SEPTEMBER 26 — ANALYSIS SKILL: Associate

Monday (Practice) — What things do you associate with:

summer — autumn or fall
winter — spring

Tuesday (Practice) — What things do you associate with:

green — red
blue — yellow

Wednesday (Practice) — What kinds of things do you associate with:

schools — stores
hospitals — playgrounds

Thursday (Practice) — Watches, clocks, calendars, sundials are associated with what?

Friday (Integrate) — Use your reading or study of _____this week to associate ideas, characters, events, facts with other ideas, characters, events, and facts.

WEEK OF OCTOBER 3rd — ANALYSIS SKILL: Subtract

Monday (Practice) — Subtract a letter from each word to get a new word.

hate — cape
tape — mate

Tuesday (Practice) — Subtract a number from each number below. Give your answer. Subtract 10 from each number (etc.)

13 — 35 — 457 — 5,679

Wednesday (Practice) — Subtract one side from this figure. What would the new figure be called? (Do as many examples as you want.)

Thursday (Practice) — Subtract two letters from these proper names. What new names would you have?

Sammy — Joseph
Maria — Alice

Friday (Integrate) — Use your course of study to subtract events, facts, characters, people, or ideas to change the outcome of a situation. (In other words, have them integrate this skill, using information, facts or ideas they have learned/studied during this week.)

WEEK OF OCTOBER 11th — ANALYSIS SKILL: fill in

Monday (Practice) — Fill in this sentence in at least five ways.

THE GIRL WAS IN TROUBLE BECAUSE SHE_____.

Tuesday (Practice) — Have another character from a fairy tale or your reading fill in for Santa Claus on Christmas Eve. Explain what would happen.

Wednesday (Practice) — Explain how you have "filled in" for your mother or father by doing one of their"jobs".

Thursday (Integrate) — Make up a quiz for yourself or classmates on yesterday's story, so that you or your classmates have to fill in the answers.

Friday (Integrate) — Using your study during the week, fill in new ideas, characters, or events. Explain how they would change the story.

WEEK OF OCTOBER 18th — ANALYSIS SKILL: separate

Monday (Practice) — Separate these compound words into two words.

blackboard	typewriter
dishwasher	sailboat

Tuesday (Practice) — Explain how your separate the white of an egg from the yolk. (If your kids have never seen this done, that would be an excellent illustration of separate to use as an introduction to this skill.)

Wednesday (Practice) — Have you ever gotten separated from your mother, father, sister, or brother while you were shopping or taking a trip? Explain how you felt.

Thursday (Practice) — Separate these types of clothing into two groups. Name the groups.

boots	raincoat	bikini
beach hat	robe	sandals

Friday (Integrate) — Use ideas, events, or characters from your study. Separate them according to age, taste color, use.

WEEK OF — ANALYSIS SKILL: differentiate

Monday (Practice) — Differentiate between daytime and nighttime. How do they differ?

Tuesday (Practice) — Differentiate these words. How do they differ?

hat	hate
sit	site
cap	cape

Wednesday (Practice) — Differentiate these numbers. How do they differ?

3	35
7	61
5	27

Thursday (Practice) — Differentiate between the dinosaurs of prehistoric times and the crocodiles of today.

Friday (Integrate) — Use ideas or facts from your reading or study. Differentiate them according to size, time, place, or importance.

PLEASE NOTE: THESE EXAMPLES ARE SAMPLES ONLY. YOU DO NOT HAVE TO USE THESE PARTICULAR EXAMPLES. YOU CAN MAKE UP YOUR OWN RELATED TO IDEAS, SUBJECTS, THEMES, STORIES YOU ARE WORKING ON.
YOU MAY WANT TO MAKE SIMPLER OR MORE DIFFICULT EXAMPLES, ACCORDING TO YOUR PARTICULAR GROUP.

WHAT WE DO WANT TO INSURE, HOWEVER, IS THAT ALL IGC AND SPE STUDENTS LEARN THE BEHAVIORS OR COMPONENTS OF THE HIGHER LEVEL THINKING SKILLS AND THEN BE ABLE TO INTEGRATE THESE SKILLS. HOWEVER, YOU ATTAIN THAT GOAL WILL BE BASED ON YOUR OWN STYLE AND APPROACH.

N.T.G.

A BREAK-DOWN OF THE LEVELS OF THINKING

Level 6: EVALUATION

interpret	decide	dispute
justify	infer	rate
criticize	conclude	set standards for
verify	select	weigh
judge	choose	solve

Level 5: SYNTHESIS

compare	design	reorganize
contrast	redesign	restate
predict	reconstruct	systematize
translate	rearrange	symbolize
extend	rename	vary
hypothesize	regroup	formulate
substitute	modify	minimize
maximize	alter	connect

Level 4: ANALYSIS

take apart	differentiate	subtract
part of	divide	associate
fill in	isolate	relate
take away	order	pattern
put together	separate	group
combine	distinguish	arrange
dissect		

Level 3: APPLICATION

use
demonstrate
show
construct
experiment

Level 2: COMPREHENSION

classify	give relationship
summarize	describe in own words
organize	state in own words
confirm	interpret

Level 1: KNOWLEDGE

remember	list	state
recall	define	describe
recognize	identify	gather
respond	name	

NOTE: You may want to post this list on oaktag in your room so your students can refer to it.

APPLYING THESE THINKING SKILLS TO SPECIFIC CONTENT AREAS (INTEGRATION)

You as the teacher can (AND IN FACT SHOULD) apply the six levels of thinking, and their several component behaviors, to all the content areas. If you do not integrate these skills for and with the students, the students will not internalize the skills and be able to transfer them in other learning situations in and out of school.

The students must be made to see that these skills are components of thinking. We are learning them (KNOWLEDGE) in a practice situation so they can be used in all other situations (APPLICATION). Otherwise, the knowledge itself will never be applied.

How do we do this?

Here's one example. On the following page is an article which appeared in The New York Post this September. This article can be used as a reading/language arts activity with follow-up questions and/or a discussion. The questions illustrate practice and integration of the six levels of thinking.

Associated Press Wirephoto

Steve and Lois Wolfson with their two-year-old son, Adam, yesterday outside their Los Angeles apartment. Their landlord is trying to evict them, saying babies are not welcome in the building.

Baby ban gives birth to suit

LOS ANGELES (AP)—Steve and Lois Wolfson like their apartment overlooking a yacht harbor at Marina del Rey, and they say they're not about to leave just because they have a baby.

For almost a year, they ignored an eviction notice issued after their landlord established a ban on children.

Now they have asked Judge Harold L. Chernese of Culver City Municipal Court to rule on a suit they brought to keep the $390-a-month apartment. Testimony begins today.

Mrs. Wolfson said nobody objected for more than a year after she brought Adam home from the hospital in September, 1975.

"We've never had any complaints about Adam," Mrs. Wolfson said. "In fact, all of our neighbors have signed affidavits saying they like him and want him to stay in the building, and they're appearing in court on our behalf."

In November 1976, after the Wolfsons had signed a lease renewal, they got a letter from their landlord, Marina Point Ltd., telling them they would have to leave because of the baby. They chose to fight eviction.

"We love it here. It's a terrific buy," Wolfson said. "There's a great view of the marina from both bedrooms."

Several other children already live in the apartment complex. They lived there before the ban was imposed.

"The children from adjacent buildings who come over to play in front of this one are a lot noisier than Adam's ever been," said a neighbor, Robert Smith.

Use The New York Post article, "Baby ban gives birth to suit," to answer and/or discuss the following questions:

1. Describe the problem the Wolfson's are now having with their apartment. (LEVEL 1: KNOWLEDGE)
2. Summarize why the Wolfson's have refused to leave their apartment. (LEVEL 2: COMPREHENSION)
3. Show what the article states people like the Wolfson's can do to avoid being evicted from their apartment. (LEVEL 3: APPLICATION)
4. Fill in with two words from the beginning of the article that mean almost the same as the underlined word: (LEVEL 4: ANALYSIS)

   "There's a great view of the marina from both bedrooms."
5. Find at least five words in the article that we can associate with being in court. (LEVEL 4: ANALYSIS)
6. Differentiate between the meaning of the word "suit" as "a matching outfit or set of clothing." (LEVEL 4: ANALYSIS)
7. Predict the possible outcomes of the Wolfson's suit. (LEVEL 5: SYNTHESIS)
8. In the Wolfson's case, the landlord is trying to evict them because they have a baby. Substitute another reason why landlords try to evict tenants. (LEVEL 5: SYNTHESIS)
9. If you were the judge in this case, how would you decide or solve the case? (LEVEL 6: EVALUATION)

Integrating these skills with creative writing is easy. Here are some sample assignments at each level.

LEVEL ONE: KNOWLEDGE

You are the largest tree in Central Park. Describe what you have seen.

Write a description of a person you know.

LEVEL TWO: COMPREHENSION

You are lying on the bank of a stream watching your fishing line. Suddenly you hear a rustle in the leaves behind you. You jump up. Describe in your own words what happens next.

You have just invented a new toy for children. Organize your advertising campaign.

LEVEL THREE: APPLICATION

Construct the type of transportation we might use in the year 2000.

LEVEL FOUR: ANALYSIS

Combine the characters "Fonzie" and Richie of "Happy Days" into one new character. What qualities would this character have and how would he act.

Isolate one of "Fonzie's" qualities or characteristics. Give that quality to Cinderella. How would that change the story?

LEVEL FIVE: SYNTHESIS

You are the pilot of a large transcontinental jet airliner which has just taken off from an airport. Suddenly you notice that one engine is on fire. Predict what happens.

Take the story of Cinderella. Substitute the Prince for Cinderella and Cinderella for the Prince. Tell how the story would be different.

LEVEL SIX: EVALUATION

You have just been told by your doctor that you will be blind in two days. You have only two days to see. Decide how you will spend your last two days of sight.

A BRIEF DESCRIPTION OF "THE ENRICHMENT TRIAD MODEL"

" The Enrichment Triad Model," which we are using in Community School District #4, was developed by Dr. Joseph S. Renzulli of the University of Connecticut at Storrs. The model is based on Renzulli's belief (arrived at after an extensive search of the literature, including the works of Gelton, Lita Hollingsworth, and others) that those people who make the greatest number of contributions to society have been and are those NOT in the top 2% of the population, the so-called "geniuses" as measured by traditional IQ tests, BUT THOSE IN THE GROUP DIRECTLY BELOW THAT; that is, those in the 115 to 130 IQ category.

Renzulli defines the gifted as those who have above average (but not necessarily superior) intelligence, have task commitment, and are creative. To be gifted is to possess all three characteristics.

In order to nurture those who are gifted by the above definition, the following three types of activities or experiences must be provided:

TYPE ONE: General Exploratory Experiences

In this category are trips, films, movies, speakers, television programs, and the like. These experiences are provided to "turn on" kids.

TYPE TWO: "The Good Guys" of Education

In this category are both the basic skills and the higher level thinking skills. These studies prepare kids for problem solving, critical thinking, logic, and creative thinking.

TYPE THREE: Individual and Small Group Investigations into Real—Life Problems

Once the kids are "turned on" (TYPE ONE) and they have the skills they need (TYPE TWO), they will be ready to explore areas of interest to them. These areas/problems/subjects will be chosen by the students and will be "real" in the sense that they will be product-oriented. As Renzulli says, we as adults don't practice what we do; we do it for real. Kids are involved when they are doing it "for real," not because it's practice for the teacher's sake.

(During the year, I will be providing you with as many Type I Activities as possible. Your suggestions and feedback in this area will be most helpful. N.T.G.)

APPROACHING VOCABULARY DEVELOPMENT IN A SYSTEMATIC WAY

(From Word Power Made Easy by Norman Lewis)

Over half of our English words (65% to be exact) are derived from Latin and Greek. Certain roots, prefixes, and suffixes recur over and over again. If the meanings of these roots, prefixes, and suffixes are known by our gifted/talented students, then 1) the number of words they know will certainly be increased and, more important, 2) their method of attacking words will be more successful.

Let's begin with some Greek roots:

ANTHROPOS, humanity, the human race

Examples: anthropology, the study of humanity
philanthropy, love of people
anthropologist, one who studies people
philanthropist, one who love people
misanthrope, one who hates people
misanthropy, hatred of people

GEOS, earth

Examples: geology, the study of the earth
geologist, one who studies the earth
geometry, the measuring of the earth
geography, the study of the earth's surface

BIOS, life

Examples: biology, the study of living things
biologist, one who studies living things
biography, one's life in writing

biographer, one who writes the story of someone's life

autobiographer, one who writes the story of one's own life

biopsy, a medical examination of living tissue

ASTRON, star

Examples: astrology, the study of the stars

astrologer, one who studies the stars

asterisk, * a symbol that looks like a star

astronomy, the study of the order or arrangement of the stars

astronomer, one who studies the arrangment of stars.

BOTANE, plant

Examples: botany, the study of plants

botanist, one who studies plants

botanical, of plants

ZOON, animal

Examples: zoology, the study of animals

zoo, a place where animals are kept

zoologist, one who studies animals

zoological, of animals

-OLOGY, the study of

Examples: anthropology, the study of the human race

biology, the study of living things

cardiology, the study of the heart

cosmetology, the study of cosmetics

geology, the study of the earth

geneology, the study of one's "roots" or ancestors

meteorology, the study of the weather

neurology, the study of the nerves, nervous system

psychology, the study of the mind

physiology, the study of the body

radiology, the study of radium, x-rays

sociology, the study of societies, how people live in groups

zoology, the study of animals

In October, have your students find other "-ologies" and other words containing the roots studied.

CAN THE ASTOR PROGRAM HELP US?

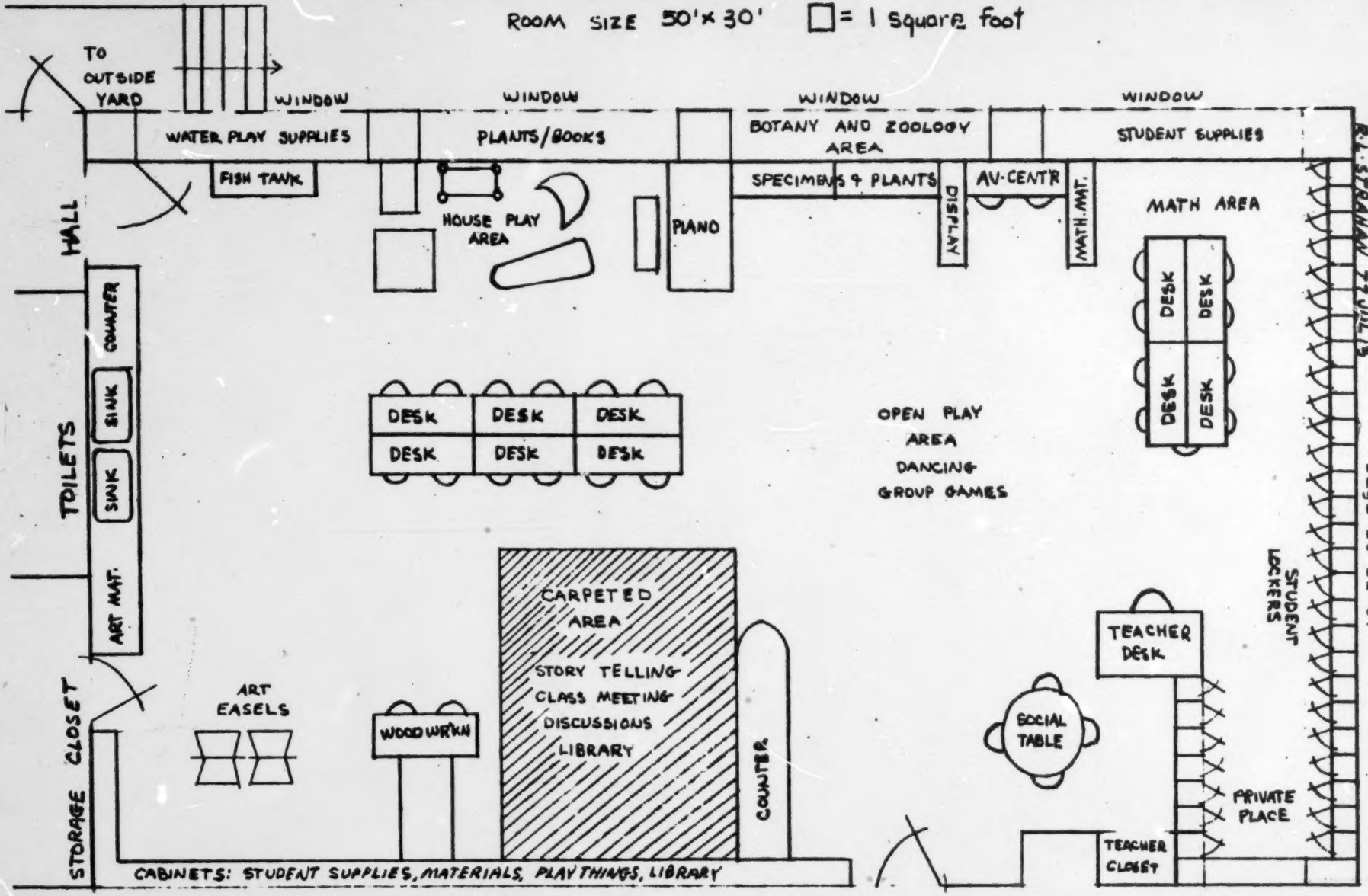
The Astor Program classes in New York City were the concept of Dr. Virginia Z. Ehrlich of Gifted Child Studies, New York City Board of Education. These classes were established for very young gifted children in several New York City districts (among them, 2, 13, and 26) by Dr. Ehrlich, who was the recipient of a grant from the Vincent Astor Foundation.

The grant was awarded as "seed" money; its purpose was exactly that: to establish the classes in the districts as model projects, which the districts would take over the expenses of at the end of the three-year period. The period of the grant ended in June of this year, and most of the districts have continued the classes on tax-levy funds.

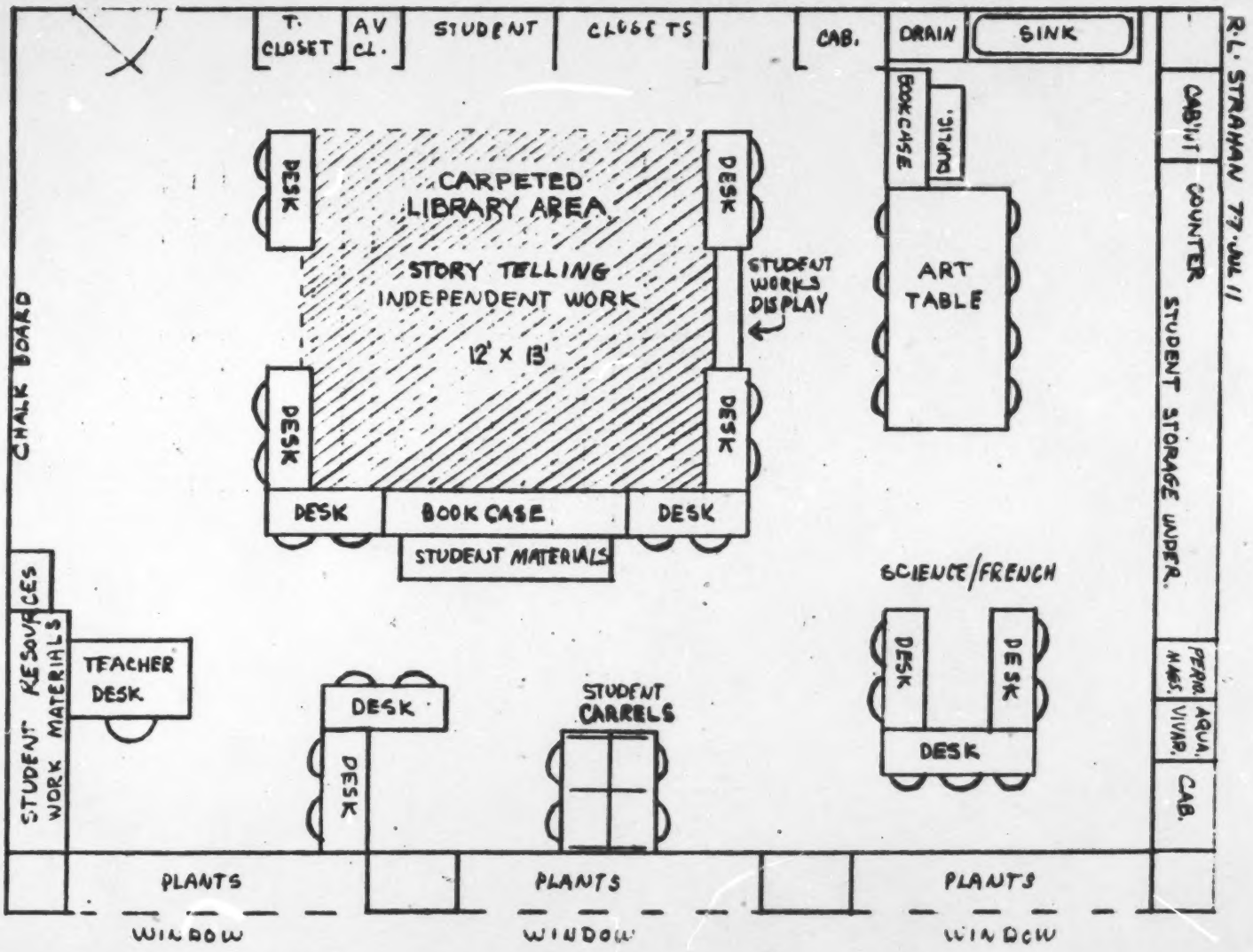
Even though the program was designed to meet the needs of the gifted, ages 4-6, many of its principles, concepts, and designs are worth examining for possible replication. Information of this program appears on the following fourteen pages.

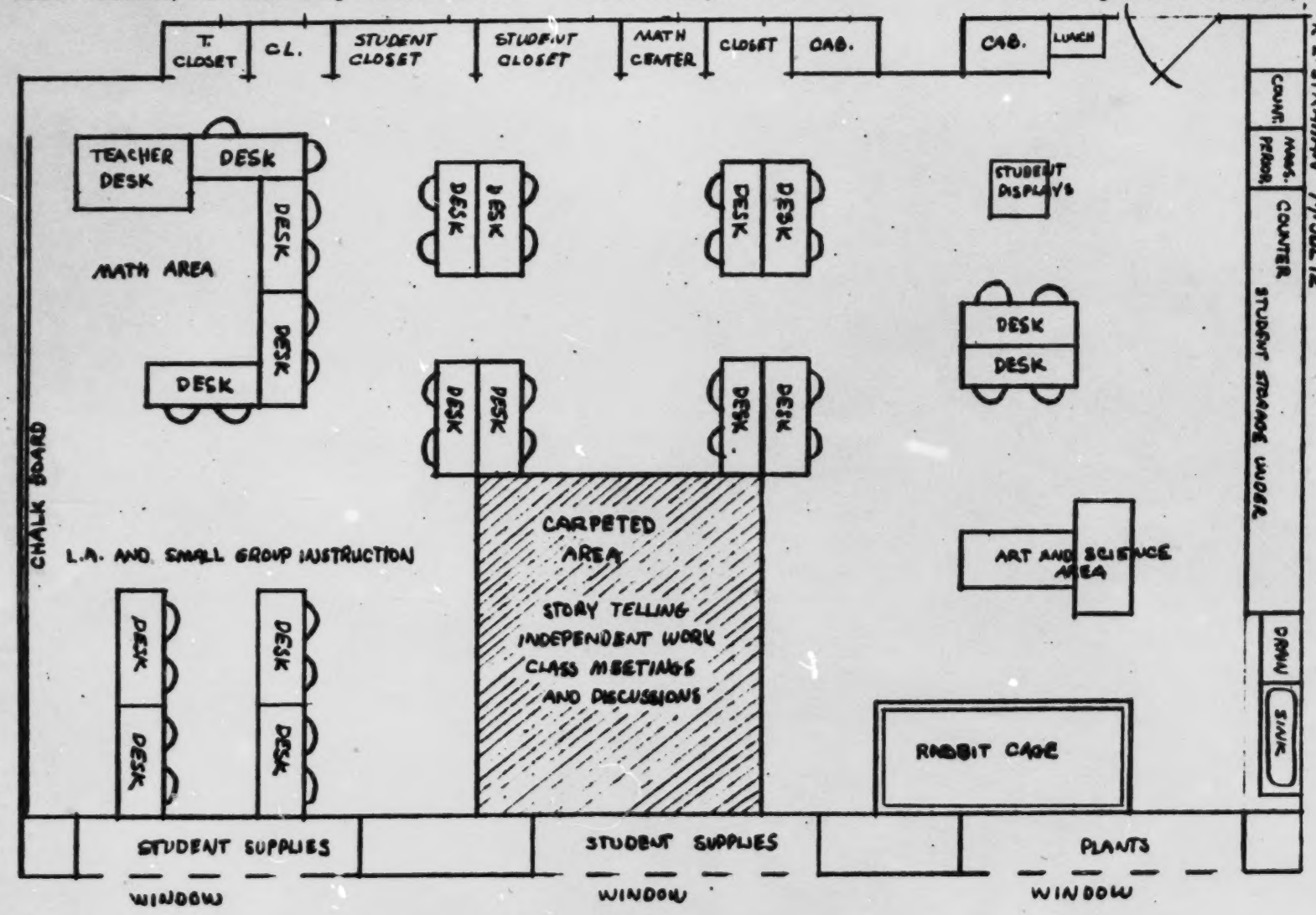
ASTOR PROGRAM, New York City Public Schools CLASSROOM FLOOR PLANS Dr. Virginia Z. Ehrlich, Director

ROOM SIZE 30'x30' □ = 1 square foot



ROOM SIZE 40'x30' □ = 1 Square foot





ROOM SIZE 45'x 30' □= 1 Square foot

ASTOR PROGRAM-GIFTED CHILD STUDIES

P.S.6M LEVELS I AND II

BROAD GOALS FOR THE CURRICULUM

ART

A1 Expression of feelings and ideas through painting, drawing and design
A2 Appreciation of color, proportion, design and texture
A3 Design and construction with various materials
A4 Development of knowledge, understandings and techniques in everyday living activities
A5 Use of tools, materials and products
A6 Appreciation of the processes of industry
A7 Appreciation of our rich artistic past

HEALTH

H1 Importance and ways of protecting physical and mental health
H2 Responsibility for personal health habits
H3 Importance of nutrition
H4 Harmful effects of alcohol and narcotics
H5 Correction of remediable defects
H6 Acceptance of limitations of self and others
H7 Athletic skills, team games, corrective games and dance techniques
H8 Safe habits in work and play

MUSIC

M1 Development of skills in singing, using musical symbols, playing instruments
M2 Appreciation and enjoyment of the music of our own country and that of other lands
M3 Opportunities for creating
M4 Interpretation of rhythms
M5 Experiences in listening: for enjoyment; and to foster the ability to evaluate the quality of composition, tone and interpretation
M6 Identification of instruments

LANGUAGE ARTS

LA1 Communication of ideas through speaking, listening, reading and writing
LA2 Development of skill in reading, writing (including handwriting and spelling), listening (people, mass media) and speaking
LA3 Reading for enjoyment--appreciation of literature
LA4 Expressional and factual writing
LA5 Skill in the use of the Library
LA6 Development of work-study skills
LA7 Facility in the use of language in social situations

MATHEMATICS

MA1 Mathematics taught sequentially
MA2 Participation in experiences
MA3 Use of representational materials
MA4 Thinking through of mathematical relationships
MA5 Mastery of number facts and skills in computation
MA6 Emphasis on estimation and mental computation
MA7 Use of mathematics in functional life situations

BROAD GOALS FOR THE CURRICULUM (con't.)

SCIENCE

S1 Understanding of the interdependence of living things
S2 Observation and investigation of science in everyday environment
S3 Development of understanding of simple scientific concepts through observation, experimentation and manipulation
S4 Understanding of the reasons for and ways of practicing conservation
S5 Development of understanding and appreciation of the beauty, complexity and orderliness of the universe

SOCIAL STUDIES

SS1 Basic knowledge, skills and concepts in geography, history and civics
SS2 Citizenship practices fundamental to participation in, respect for and devotion to the American way of life
SS3 Appreciation of our American heritage
SS4 Activities in relation to family living, food, shelter, and clothing
SS5 Awareness of current affairs
SS6 Development of good human relationships based on moral ethical and spiritual values

The following tables were used by each group to guide it in its efforts.

Social Studies Level and Type of Thinking

	Description	Explanation	Evaluation	Expansion
Generalization	In all colonial relations, the mother country exploits the resources of the colony.	Produce and justify a generalization on colonization.	Did the colonists have a better system of justice than we have now?	Predict our trade relationships with our Martian colonies
Concept	The American colonies' trading policies with the mother country.	Showing the sequence of events by which the goods were exchanged.	Which of the mother countries had the most lenient policies toward their colonies? Why?	Comparing trade policies of colonial days and today.
Data	A detailed description of the Pilgrims' journey.	Explaining why the Pilgrims felt they had to leave England.	Were the Pilgrims justified in leaving England? Why?	Suppose the Pilgrims had landed in Virginia, what might have happened?

Classification of Biological Topics

	Description	Explanation	Evaluation	Expansion
Generalization	The system of photosynthesis.	Show how the system of photosynthesis explains the change in leaves from brown to green.	Does this represent an adequate statement for photosynthesis? $CO_2+H_2O \rightarrow (CH_2O)+O_2$	What would happen if the system of photosynthesis ceased functioning?
Concept	The definition of a heterotroph.	How do we know that the oxygen from photosynthesis comes from water?	Do you believe that it was essential for autotrophs to develop?	Contrast the autotroph and the heterotroph.

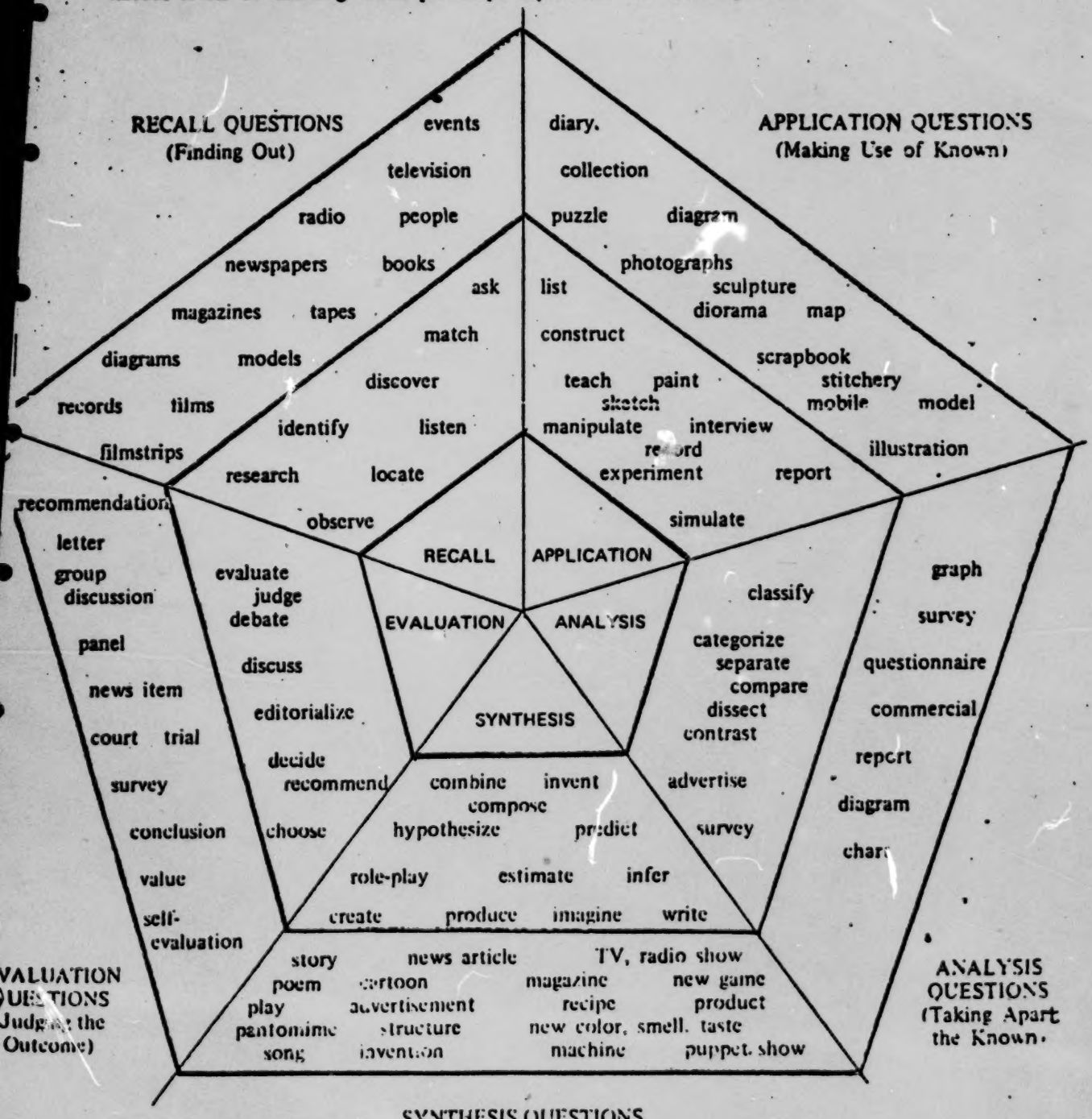
Data	What colors do you see in the spectroscope?	Describe in sequence the experiment by Calvin.	Was our experiment a success?	Compare black and white cloths in their ability to absorb light.

Classification of Mathematics Topics

	Description	Explanation	Evaluation	Expansion
Generalization	Distributive law of multiplication $p=2(l+w) = 2l + 2w$	Prove: In a right angle triangle, the square of the hypotenuse equals the sum of the squares of the other two sides.	Compare 2 number systems, one with base 2 and one with base 10. State the advantages and disadvantages of each.	Describe our system if we had 3 fingers on each hand.
Concept	What is the empty set? All the zebras in this room.	Explain why betting that four straight "tails" will come up in coin tosses is unwise?	Is the "Russian peasant" approach to multiplication a useful technique?	Indicate all the consequences you can think of - if there were no zero concept in our mathematics.
Data	Give the 11's in the multiplication table up to 220.	If Joe is taller than Pete and Pete is taller than Sam, what do we know about Joe and Sam?	Which is more, 37x22 or 18,370÷20?	How many differe ways can you mak 4?

DEVELOPING THINKING SKILLS THROUGH CREATIVE LEARNING CENTERS

Note to Teachers: The mastery of the characteristics of each level of thinking is a great help in writing better questions. As a teacher builds a learning center, he may use the web below to select verbs (process) and nouns (product) when writing questions at the various levels of thinking. Each pie shape represents one thinking level.



THE EIGHT THINKING - FEELING PROCESSES
(Pupil Behaviors)

CUES:	DEFINITIONS:
FLUENT THINKING	To think of the most:
who can think of the most ...	generation of a quantity
how many ways ...	flow of thought;
think of all the ...	number of relevant responses.
FLEXIBLE THINKING	To take different approaches:
what other ways ...	variety of kinds of ideas;
what different kinds ...	ability to shift categories;
what else...	detours in direction of thought.
ORIGINAL THINKING	To think in novel or unique ways:
think of an original and interesting ...	unusual responses;
think of something you have never thought of before ...	clever ideas;
design or invent a unique...	production away from the obvious.
ELABORATIVE THINKING	To add on to:
add on to ...	embellishing upon an idea;
do something to make it more interesting...	embroidering upon a simple idea or response to make it more elegant;
beautiful ...	stretching or expanding upon things or ideas.
RISK-TAKING (COURAGE)	To have courage to:
can you guess ...	expose oneself to failure or criticism;
make a prediction...	take a guess;
take a chance ...	function under conditions devoid of structure;
	be unconventional (different).

IMAGINATION (INTUITION)	To have power to:
what might happen if...	visualize and build mental images;
suppose that ...	dream in the world of fantasy;
let's pretend that you ...	feel intuitively;
	reach beyond artificial or sensual boundaries.
COMPLEXITY (CHALLENGE)	To seek the challenge to:
what other new and different ways ...	seek many alternatives;
can you find out more about ...	see gaps between how things are and how they could be;
how many other possibilities ...	bring order out of chaos;
	delve into intricate problems or ideas.
CURIOSITY (WILLINGNESS)	To want to:
what else would you like to know ...	be inquisitive;
would you like to find out ...	toy with an idea;
would you care to feel, smell, touch, listen, see, taste ...	grope for new insights;
	follow a particular bent just to see what will happen.

LET'S DEVELOP . . .

FLEXIBLE THINKING

-- What different ways can you find to use a rubber band? (e.g., bookmark, bracelet, etc.)
-- List of uses for common object, such as safety pin
-- Think of all the ways you can reuse discarded things in your house to prevent pollution
-- How many items could you make from wood?
-- How would the history of the human race have been changed if man had never discovered fire?
-- What different kinds of ways might you be able to describe a beautiful day besides being just "beautiful" or "sunny" or "hot", etc.
-- What if . . . questions (in history, etc.)
-- Think of all the different ways you can use a tin can.
-- What different kinds of ways can you teach the alphabet?
-- What different ways can a child respond besides verbally?
-- How can you use a fork to eat different kinds of food?

FLUENT THINKING

-- Who can think of the most sounds you might hear on a car trip to the grocery store, on a walk through the park?
-- Think of an idea and see how many ways it can spread.
-- How many reasons can you think of for skipping school?
-- What's the most useless thing you can think of?
-- Most uses for bottles caps? organe juice cans?
-- Name all the things you can pin.
-- Name all the things you can that pollute.
-- How many ways can you prevent water pollution?
-- Who can think of the most ways to show the number 8?
-- Who can think of the most advantages or disadvantages of medicine?
-- Who can think of the most ways of entertaining children while baby-sitting?
-- Think of all the ways you can say "I love you".
-- Think of all the different routes you can use to get from your house to school.
-- Devise a list of all the homonyms.
-- List all the things you can that will fit through a finger ring.
-- How many different things can you eat with a fork?
-- How many different products are made from milk?
-- Think of all the street you cross going to the store.

ORIGINAL THINKING

-- Design a unique school room of the future keeping in mind both needs and desires.
-- Think of original and interesting solutions to war, traffic problems, pollution.

-- Think of something you have never thought of before like multi-colored clouds. Let each one in group name something or let them discuss what effects multi-colored clouds would have--what changes would they make?
-- Combine characteristics of two animals, etc., kangarat or rhinoceragator
-- Think of a novel way for a car to park, eg., vertical, big wheel underneath.
-- Put toothpick, paper clip, paper in an envelope-makes something out of it.
-- Use nonsense words-have them make a story out of it.
-- Some painting or ink blot and ask them to describe what they think i is.
-- Write an original recipe using rice.
-- What are similarities between Mahatma Ghandi and State of California?
-- Think of some unusual ways to describe an ant which have never occurred to you before.
-- Think of new ways to use a cardbord box.
-- Design an original type of clothing.
-- Free association pairs of words.
-- Design a new pattern for a dress.
-- Finish writing the beginning of a play or a skit and act it out.

ELABORATIVE THINKING

-- Draw one straight line and one circle on your paper. Now add on to these to make any design or picture you can.
-- Put a new ending on a story:
Make "plain Jane" more interesting. This could be a brainstorming session, a personality discussion, an art lesson or creative writing.
-- Can you expand on the safety devices for cars that have already been developed.
-- Given an item of clothing add decorations.
-- Given a very simple plot have the child add description, emotional appeal, etc.
-- Show pictures depicting pollution--ask what would add or take away from pictures.
-- Give class each a blank piece of paper -- ask each to beautify it in some way -- with crayons, etc.
-- Think of the many possibilities for adding individuality to the garment you are constructing.
-- How could you change the ending of this short story to make it even more interesting?
-- Decorate your jeans.
-- Turn a "flat dot" on the board into a character.
-- Start a story and pass it on to be completed and added on to by others.
-- Begin with a piece of clothing and add on to it to make a complete, interesting costume.
-- Start with a piece of clay and add on to it to make something.

CURIOSITY

-- Homemade thermometers -- why and how of a thermometer
-- Make the cork on the bottle shoot up and hit the ceiling.

-- The five senses -- how do they make us aware of what's going on?
-- I wonder how my classmates would react if I did everything in a reverse motion (like running a film backwards).
-- What would happen if someone protested with a sit-down strike.
-- Encourage children to taste something and guess what the ingredients are.
-- Would you like to find out more about the balance of nature by studying a terrarium or an aquarium?
-- I wonder what will happen if you strike a match to the cube of sugar saturated with lemon extract or brandy.
-- What would happen if all of a sudden you could not speak English?
-- Would you like to find out how algae tastes?
-- Would you like to find out what your feelings would be if you were a parent instead of a child?
-- Would you like to know what is in a mole's home.
-- Encourage children to remember and discuss their most recent or vivid dreams. They should wonder "why".
-- Encourage children to mix ingredients (Science) to test bunches (could work with colors).
-- Experiment with various speeds and instruments (they might find a piano and cymbals don't mix).
-- I would like to feel like a fish living in an aquarium for two days. How do you think it feels?
-- I would like to know about how nutritious the natural foods are.
-- I would like to know more about the influence of the body's genes.
-- What else would you like to know about outer space?

RISK-TAKING

-- Would you take a chance on a newly-developed surgical procedure if it might save your life?
-- Predict what would happen if nothing was done about air pollution.
-- Can you guess what you'd do if you were one of the few survivors of an airplane crash?
-- Take a controversial issue -- children give honest opinions.
-- Given a box with hidden object, guess what it could be by smell, sound, etc.
-- Make a predicition on abortion law -- will it change?
-- Can you guess what will happen to P.O.W.'s when they return to society?
-- Marijuana legalized.
-- Explain why you hold that opinion. Appear before a senate investigating committee and defend a person whom - the public has already condemned.
-- Could you take a guess as to why French students go to school on Saturdays rather than on Thursdays?
-- Act as Devil's Advocate -- take opposite of accepted view.
-- Bring up a controversial issue and students defend view.
-- Can you guess what would happen if you put a thermometer in hot water?
-- What would happen if you pulled the fire alarm?
-- Why do you believe in God?
-- Make a prediction as to what the direction and extent population growth will take.

IMAGINATION

-- What might happen if the earth lost all gravity.
-- Suppose you were the teacher and I the student.
-- Imagine being the first teen-ager on the moon.
-- How would our life-style look from a Martian's viewpoint?
-- Imagine you are an amphibian
-- Imagine yourself in each of the stages of evolution -- such as fish, amphibians.
-- Let's pretend that you have just arrived in Paris -- what would be the first thing you would do or the first place you would visit?
-- Pretend you are fire.
-- Pretend that you are the mother of a 14 year old daughter who came home very late.
-- If you could be any animal what would you be and why?
-- Draw a picture of what you think a space man or moon man looks like.
-- Take the dress (hairdos, house, etc.) and make it appropriate for the future (50 years in future, 100 years).
-- No eyes in head. Pretend your eyes are in your fingers. What would you see?
-- Let's pretend (on seeing a scene) what it might look like ten years from now. Take item by item.
-- "What might happen" if we woke up tomorrow and everyone had three legs?
-- "What might happen if" it never rained again?

COMPLEXITY

-- Take a group of blocks and objects -- make city
-- Take a group of blocks and separate according to color and size
-- Give eight parts of a story, arrange in two patterns that make sensible and completely different endings.
-- What else could Nixon have done in approaching Vietnam War?
-- What alternatives are there to stop hijacking?
-- Give them a maze (easy one), have them find what's wrong with it?
-- Gap between how the United Nations is and how it could function as a world government.
-- Discuss complexity of different trends in family living.
-- How many other possibilities can you think of as solutions to the drug problem besides a long jail sentence?
-- Show pictures of many kinds of mammals and make their own classification.
-- Compare the implications of a cigarette ad with the realities.
-- What other ways can we measure how well we're doing besides grades?
-- What other ways can we transport effectively besides cars?
-- List different activities which occur in this classroom with which you are unhappy and come with a suggestion for remediation.

HOW TO SET UP A CLASSROOM LIBRARY

Before you begin, provide every student with a copy of the Dewey Decimal System and write it on the board. Then follow these easy steps:

1) Bring all the classroom library books to the front of the room. Decide on which category each book goes in as a group.
2) Divide class into ten groups (2 or 3 in each group). Have one student in each group fill in title, author card for all books in that category. Second student glues pocket in each book. Third student in group puts masking tape on book spines and records Dewey Decimal number on tape. (You need ten magic markers, ten rolls of tape.)
3) Each group takes one category, marks all books in that category, makes sign for that category to go with books.
4) One student transfers Dewey Decimal System onto oaktag and displays poster in prominent place in the room.
5) Ten classifications can be color-coded and books can be placed in ten different locations in the room (optional).
6) Periodical section can be added to easily. You and students continue to bring in articles of interest from newspapers, place in plastic covers, and have one student develop filing sytem (SYSTEMATIZE,remember, is a synthesis skill).

Here's the Dewey Decimal System briefly:

NON-FICTION:

000-999 GENERAL WORKS

Encyclopedias,periodicals, newspapers

100-199 PHILOSOPHY

Conduct, ethics, psychology

200-299 RELIGION

Bible stories, myths

300-399 SOCIAL SCIENCES

Customs, commerce, education, government, law economics

400-499 LANGUAGE

Dictionaries and languages

500-599 PURE SCIENCE

Math, astronomy, biology, chemistry, physics

600-699 APPLIED SCIENCE

Engineering, aeronautics

700-799 ARTS AND RECREATION

Architecture, music, sports

800-899 LITERATURE

Poetry, Drama, Essays

900-999 HISTORY

Travel, geography, biography

FICTION:

Filed by author's last name

COMMUNITY SCHOOL DISTRICT #4
GIFTED/TALENTED STAFF

P.S. 57

Ms. Wynolia Pulliam
Principal

172 East 115th Street
New York City 10029

Phone: 860-5812

Staff:

I.G.C. 6th Grade - Perla Holder
I.G.C. 5th Grade - Ann Marie Lanzke
I.G.C. 4th Grade - Mildred McGee
I.G.C. 3rd Grade - Nancy Salvo
I.G.C. 2-3rd Grade- Leatrice Cantor
Pre-I.G.C. 2nd Grade-Michele Donay
Pre-I.G.C. 1st Grade-Sue Herman
Pre-K I.G.C. - Elaine Smithline

P.S. 72

Mr. Marcelino Rodriguez
Principal

131 East 104th Street
New York City 10029

Phone: 860-5831

Staff:

I.G.C. 6th Grade - Lynne Tillotson
I.G.C. 5th Grade - Ramell Martin
I.G.C. 4th Grade - Anita Dunetz
I.G.C. 3rd Grade - Marjorie Simon
Bilingual IGC 3-4 - Estrella Jacobowitz

Ms. Susan Siegal
Ms. Awilda Astandola
Curriculum Assistants

P.S. 96

Mr. Lawrence Paley
Principal

216 East 120th Street
New York City 10035

Mr. Al Sofferman
Assistant

Phone: 860-5851

Staff:

I.G.C. 6th Grade - Sharon Friedlander
I.G.C. 5th Grade - Reevan Tucker
I.G.C. 5-6th Grade- Pat Piro
I.G.C. 4th Grade - Roberta Miller
I.G.C. 3rd Grade - Barbara Lang

P.S. 108 — Mr. David Cutie, Principal — 1615 Madison Avenue, New York City 10029 — Phone: 860-5803

Staff:
I.G.C. 6th Grade - Ruth Medina
I.G.C. 5th Grade - Yvette Geary
I.G.C. 4th Grade - Paul Brandoff

Ms. Maria Sepulveda, Curriculum Assistant

P.S. 146 — Ms. Vernella D'Arbeau, Principal — 421 East 106 Street, New York City 10029 — Phone: 860-5877

Staff:
I.G.C. 5th Grade - Renee Tambor
I.G.C. 4th Grade - Alan Kaplan
I.G.C. 3rd Grade - Jeanette Miller
I.G.C. 2nd Grade - Susan Kotkin

Ms. Judith Budd, Curriculum Assistant

P.S. 155 — Ms. Lavinia Mancuso, Principal — 319 East 117th Street, New York City 10035 — Phone: 860-5885

Staff:
I.G.C. 5th-6th Grades - Ana Amaez.
I.G.C. 1-2nd Grades - Karen Navarro

Ms. Diana Maldonado, Curriculum Assistant

P.S. 206 — Ms. Juana Dainis, Principal — 508 East 120 Street, New York City 10029 — Phone: 860-5809

Staff:
I.G.C. 6th Grade - Hector Bourquet
I.G.C. 5th Grade - Yvette Cannarozzi
I.G.C. 4th Grade - Jules Solnick
I.G.C. 3rd Grade - Johanna Hank

J.H.S.13 — Mr. David Bluford — East 106 Street & Madison Av, New York City — Phone: 860-5822

J.H.S. 13

Staff:
- $9SPE_1$ - Velma Foster (Science)
- $9SPE_2$ - Gary Cooper (Science)
- $9SPE_3$ - Richard Mermelstein (Math)
- $8SPE_1$ - JoAnn Barnett (English)
- $8SPE_2$ - Roy Fisher (Social Studies)
- $8SPE_3$ - Felix Matos (Spanish)
- $7SPE_1$ - Maria Bianco (English)
- $7SPE_2$ - Alan Silver (Social Studies) (Science/Math)

Mr. Marty Olivieri, Curriculum Assistant

J.H.S. 45 Mr. Isidore Bernstein, Principal — 2351 First Avenue, New York City 10035

Mr. H. E. Lipkowitz, SPE Director — Phone: 860-5838

Staff:
- J. D. Grey, Supervisor, Language Arts
- C. Barthold, SPE, Math 8
- H. Doof, Newspaper and Magazine Production
- B. Dub, SPE, Math. 7
- E. Evans-Bey, SPE Science 7
- M. Foster, SPE Language Arts 7
- A. Garcia, SPE Spanish 7 & 8
- R. Harris, SPE Science 7
- Z. Hogans, Foods and Home Catering
- B. Kravitz, Art
- A. Mirabelli, Electricity and Electronics
- J. Murray, SPE Math 7
- D. O'Keeffe, SPE Science 8
- D. Russo, Project Room
- T. Schoppel, SPE Social Studies and Media 7
- F. Sepa, Wood and Plastics Technology
- H. Steinbuck, SPE Language Arts/Writing 8
- A. Van Zweeden, SPE Social Studies 8
- S. Walfish, SPE Social Studies 8
- E. Wallace, Chorale
- P. Wolf, Library
- T. Hay, Typing
- L. Rodriguez, SPE Spanish 7 and 8

COMING UP IN NOVEMBER

Structure of A Hurricane

How to Set Up a Weather Station

General Goals for Self-Directed Learning

Developing Social Leadership

Making Paper

The Many Faces of Giftedness

More Analysis Skills

STAFF "FEEDBACK" SHEET

It would be very helpful if you would give me feedback for future curriculum bulletins. Please feel free to make additional comments.

RATE THE FOLLOWING ITEMS IN TERMS OF ADEQUACY AND EFFECTIVENESS BY CHECKING THE APPROPRIATE CATEGORY. (KEY: 1=very effective, adequate in terms of meeting your needs; 2=sufficient; 3=needs not totally met; 4=poor, insufficient; needs not met at all. IF YOUR RATING IS 4, MAKE SURE YOU PUT DOWN YOUR NEEDS, SO THEY ARE MET IN FUTURE BULLETINS.)

BULLETIN CONTENTS

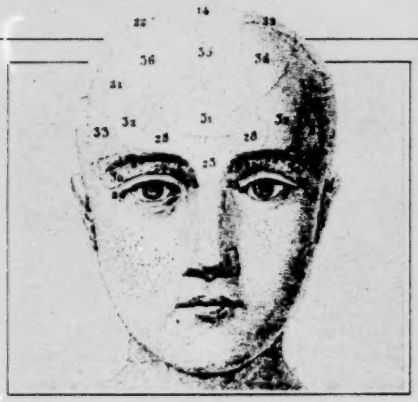
	1	2	3	4
1. Helpful in terms of conceptual information.				
2. Helpful in terms of practical information				
3. Sufficient in quality of information presented				
4. Sufficient in quantity of information presented				
5. Thought-provoking in terms of arousing interest				

FUTURE NEEDS (Check appropriate blanks)

1. Need more conceptual information _____
2. Need more practical curriculum ideas _____
   general _____
   Specific _____
3. Would like more articles in the field _____
4. Other (specify) _____

ADDITIONAL COMMENTS

SCORING YOUR SMARTS



Do you remember that kid Arnold, who sat next to you in fifth grade—the skinny guy with the thick glasses and receding chin? The one whose hand shot up the minute the teacher asked a question and who always got straight A's in his math tests but held his arm over his paper so that you couldn't copy the answers? You hated Arnold, didn't you? He was a grind, an egghead, a teacher's pet. People like Arnold gave being smart a bad name.

Actually, there's nothing wrong with intelligence. In many cases, it's a decided asset. For one thing, smart people tend to earn a lot of money. And women—canny creatures that they are—have a marked preference for brainy men.

Luckily, most intelligent people bear absolutely no resemblance whatsoever to the Arnold stereotype. A case in point is Mensa, an organization whose one qualification for membership is that you score in the top 2 percent of any standard IQ test, that is, have an IQ of more than 136. Mensa members include truck drivers, secretaries, bartenders, professors, housewives, and teachers—even a belly dancer exotically named Morocco and a seventy-year-old farmer. You yourself, as un-Arnoldish as you probably are, may well be Mensa material.

Mensa was conceived in 1945 by an Englishman named Sir Cyril Burt. He theorized that popular trends could be predicted by polling the brightest people in society, and that they set the patterns which others followed. Although Burt was unable to prove his theory, he decided that there was a need for an organization which would bring the intelligentsia together. He chose the Latin word *mensa*, because it means "table." It symbolizes his concept that people from all walks of life would be able to join around a table and consider each other as intellectual equals.

Given Mensa's 25,000 members, it would have to be one hell of a table. Mensa is an international organization, which has chapters in countries from Japan to the Ivory Coast. If you're interested in joining, you can submit the results of an IQ test you have already taken, or you can send six dollars to Mensa, Department PH, 1701 West Third Street, Brooklyn, New York 11223, for an IQ test that you can take at home. If you score high enough, you'll be invited to take Mensa's full-scale, supervised test. If you pass it, you're then eligible to become a member of your local Mensa group.

Meanwhile, if you can't wait to chart your smarts, Dr. Max Fogel, Mensa's supervisory psychologist, has prepared a test for *Penthouse* readers. The questions are similar to those that appear on the official Mensa test. Since time is a factor in IQ tests, keep track of the amount of time that it takes to answer the following twenty-five questions. Then, so that you can rate your brainpower, see page 104 for the answers and the Mensa scoring scale.

1. Barbara's brother Matthew has one more brother than he has sisters. How many more brothers than sisters does Barbara have?

2. Which two of the following statements together prove conclusively that some girl or girls passed the chemistry exam?

a) Some girls are nearly as good at chemistry as boys are.
b) The girls taking the chemistry exam outnumbered the boys.
c) More than half the boys passed the exam.
d) Less than half the students failed the exam.

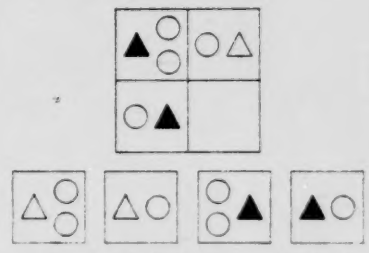
3. Underline the two words below that are most nearly opposite in meaning.

a) aggravate
b) please
c) enjoy
d) improve
e) like

4. Complete the following analogy:
C, G, Q are to F, V, R as T, X, H are to

a) V, L, G
b) B, F, Y
c) W, M, I
d) N, Z, D
e) A, B, C

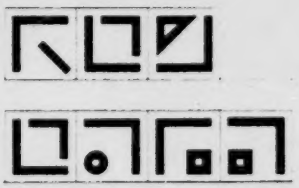
5. Complete the diagram:



(a) (b) (c) (d)

6. Find the number that logically completes the series.
7, 12, 27, 72, 207 _____

7. Complete the following series with one of the letter diagrams:



(a) (b) (c) (d)

8. Write in the brackets a word that means the same as the right-hand word in one sense and the same as the left-hand word in another sense.
Example: Hire (Engage) Betroth
Globule (_____) Fall

9. Complete the analogy by writing one word in the spaces, ending with the letter printed.
High is to low as sky is to
H

10. In the following series write in the number that follows.
35, 28, 21 _____

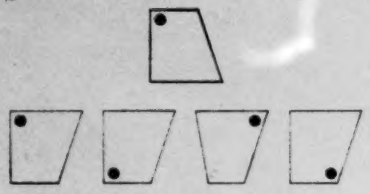
11. If Jim turns either left or right at the stop sign, he will run out of gas before he reaches a service station. He has already gone too far past a service station to turn around and return to it before he runs out of gas. He does not see a service station ahead of him. Therefore:

a) He may run out of gas.
b) He will run out of gas.
c) He should not have taken this route.
d) He is lost.

12. There is a rule of arithmetic that applies across and down. Find the rule and figure out the missing number.

6	2	4
2	?	0
4	0	4

13. Which one of the four lower diagrams can be turned over or rotated to become the same as the upper diagram?



(a) (b) (c) (d)

14. Most *Penthouse* readers are attractive.

All *Penthouse* readers are intelligent.

Therefore:

a) Attractive *Penthouse* readers are also intelligent.

b) Good looks and intelligence don't mix well.

c) All intelligent *Penthouse* readers are attractive.

d) Most *Penthouse* readers are intelligent about their looks.

15. Which word does not belong?

a) gin
b) champagne
c) chablis
d) burgundy
e) chianti

16. Pictured below, two of the shapes represent mirror images of the same shape. Underline that pair.

(a) (b) (c) (d) (e)

17. In the group of words below, underline the two words whose meanings do not belong with the others.

a) microscope
b) telephone
c) microphone
d) telescope
e) telegraph

18. Underline the two words with the most similar meanings.

a) beam
b) lump
c) giggle
d) ray
e) collection

19. Find the number that logically completes the series.

9, 16, 25, 36 _____

20. Complete the analogy by writing one word in the spaces ending with the letter printed.

Clock is to time as scale is to

/ / / / / /T/

21. Underline the two words in parentheses that have the same relationship as the two words in the first phrase.

Island is to water as

(outside, center, diagonal, area, perimeter)

22. In the group of words below, underline the two words that are most nearly opposite in meaning.

a) procure
b) retain
c) abscond
d) forfeit
e) purchase

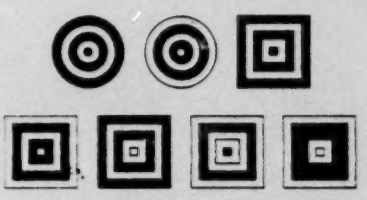
23. There is a rule of arithmetic that applies across and down the square, so that two of the numbers in a line produce the third number in each line. Write in the missing number.

6	7	13
2	5	7
8	12	?

24. Find the number that logically completes the following series.

33, 26, _____ , 12

25. Complete the following series:



(a) (b) (c) (d)

Scoring Scale For Mensa Quiz

Give yourself one point for each correct answer. You also receive an additional five points if you finished the test in less than fifteen minutes, three points if you finished in less than twenty minutes, and two points if you finished in less than twenty-five minutes.

If you scored:

25–30 points:
You are quite intelligent—a perfect candidate for Mensa.

20–24 points:
This should put you in the higher percentiles of the population—definitely a Mensa candidate.

15–19 points:
Nothing to be ashamed of—a most respectable score. You should probably try the Mensa test.

Less than 15 points:
You may have to forget about joining Mensa, but you may just be having a bad day. Don't stew about it. Some of the most successful writers, businessmen, artists, and other famous people don't have exceptionally high IQs either.

Answers

1. Three 2. (b) and (d) 3. (a) and (d) 4. (c) 5. (a) 6. 612 7. (d) 8. Drop 9. EARTH 10. 14 11. (a) 12. 2 13. (b) 14. (a) 15. (a) 16. (a), (e) 17. (b), (e) 18. (a), (d) 19. 49 20. WEIGHT 21. center, perimeter 22. (a), (d) 23. 20 24. 19 25. (a)

HOW TO GET SMARTER

If you feel that you haven't fared well on this miniature Mensa quiz, take heart. There is widespread agreement that it's possible to improve one's IQ to some extent. "The brain," says Dr. Fogel, "like any other part of the body, can be strengthened by exercise." Although intelligence is partly hereditary, thinking is a learning experience, and we must be taught to use our brains. It's common knowledge that people use approximately 30 percent of their potential brain power; so there's definitely room for improvement.

How can you raise your IQ and live up to your intellectual potential? Dr. Fogel makes these recommendations:

Read. No, not Superman comics or the backs of cereal boxes—but Tolstoy, Thackeray, and Joyce. If you push your mind to the point where it really has to work, it may feel sore, but the exercise will strengthen it.

Go to school. Any school. Take a course that makes demands on your powers of reasoning or creativity, and your mental abilities will naturally increase.

Play games. The mental gymnastics that go into a good game of chess or bridge—memory, planning ahead, and logic—are excellent brain sharpeners.

Be confident. Feelings of insecurity and a failure to develop a strong self-image will prevent you from fulfilling your potential. If you're plagued by poor self-esteem, it's a good idea to work out your problems with a professional therapist.

It's never too late to increase your brainpower. Many people muddle through their middle years and then blossom spectacularly later on. Winston Churchill's poor grammar-school record didn't keep him from becoming prime minister of England—and an internationally respected historian. And remember the German schoolboy who flunked math only to grow up to be Albert Einstein.

FOR YOUR INFORMATION

This section will appear at the end of each monthly curriculum bulletin and will contain articles of interest with curriculum ideas or suggestions which may be of help to you.

If you should come across an article in your reading which you feel other staff members should see, give me the article and I will reproduce it for inclusion in the bulletin.

If you have curriculum ideas and teaching strategies/activities to share with other staff members, I will reproduce them in the bulletin also. I want this bulletin to be relevant and useful.

A MAGAZINE WITHIN A MAGAZINE

THE LEARNING CENTER

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Poster Preview
STALKING THE WILD LIBRARY

A lot of kids—and adults, too—feel that they need a Captain Midnight Decoder Ring to figure out how to find information in a library. We're out of rings. But Activity Poster One can help demystify the Dewey decimal classification system. And Activity Poster Two shines some light on the goodies often hidden away on the reference shelf.

THE LEARNING CENTER

Swap Shop

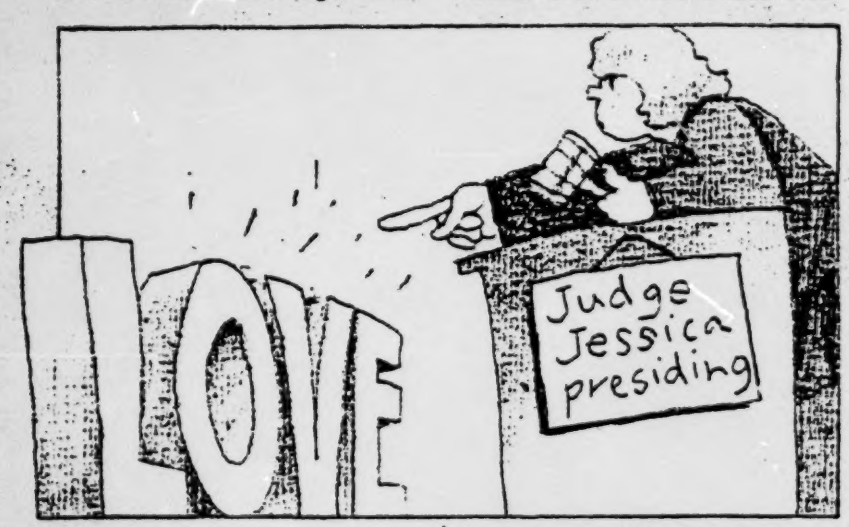
Observing this month's language arts emphasis, Swap Shop spreads the word on teaching ideas that feature a variety of verbal skills.

JAILING THE RULE BREAKERS

Phonetic justice sends "love" to jail while "hate" roams free. Also jailed are "some," "have" and "give," who are all guilty of breaking that silent e rule you've just taught.

Those phonetic rules are helpful, but there certainly are a lot of exceptions to each one. Rather than let these exceptions become a problem, why not put them in jail. A shoebox with windows cut in the sides and fitted out with pipe-cleaner bars will provide maximum security for the most phonetically undisciplined.

When new words are presented, decisions can be made as to which follow the rules (sound-out words) and which are rule breakers (sight words)



—with children acting as a jury. When a word is found guilty of rule breaking, the phonetic rule being breached is stated and the inconsistent word is sent to jail. The jail then becomes a free-access center for review and study of these sight words.

In their own reading children may discover words which seem to be rule breakers. A reader may make a citizen's arrest and bring the word to trial.

You may want to set up a system by which the rule-breaking words may be freed, as children learn to recognize them on sight.

Idea by: Michele Delperuto, Stonehedge Elementary School, Camillus, N.Y.

AD LIT

The language of advertising is spiced with superlatives. Vivid verbs and extravagant adjectives glorify everything from aspirin to zippers. Designed to stimulate the buyer, ad copy may prove an equally effective stimulator for your word-weary creative writers.

Have students browse through magazines or junk mailers, shopping for ads with catchy phrases and interesting words. Ultimately each student should narrow the field to about three favorites. These ads now become the word bank for some "found poetry."

Students may begin word selection by choosing three exciting adjectives and three descriptive verbs. These words taken together may generate some images, or conjure up some feelings that can help suggest a direction for the poetry to go—and thus aid in the excerpting of further copy bits.

Of course, the product's name, uses, general reputation, or even the student's reaction to the product, may suggest ideas that could be expressed through found poetry.

Some students might feel more secure following a set poetry form, such as cinquain, for which they can collect and select words according to a pattern. Others may enjoy experimenting freely with various word combinations until something sounds especially interesting.

Ads for a language school, an antique shop and a tour might yield something like the following:

Something for everyone—
Please make your choice:
Jewelry, art, entertainment
or groceries.
Make an impression
Or wander the seas
To Venice, Dubrovnik, the Greek
Isles or Rome.

Or consider the possibilities in furniture polish, a pain reliever and frozen vegetables:

Have you seen the new wax shine
with pearl onions
a new easy way
a highly effective safety cap?

And how about an accompanying montage of illustrations cut from the ads?

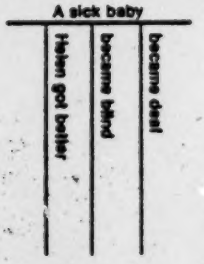
Idea by: Marilyn E. Miner, Santiago Junior High School, Orange, Calif.

BOOK RECALL STICKS

Making the transition from short, finished-in-one-sitting stories to books with chapters can be exciting for youngsters. But longer stories have more pieces to keep straight along with those extra pages, and keeping all those characters, events and important details in mind is often a tough task.

Book recall sticks—a device adapted from an Evelyn Woods technique—may help. The book recall is a form for recording a few major associations that may help the reader remember the events in a chapter of a book. The following is an example:

Helen Keller by Margaret Davidson
Chapter 1 "A Strange Fever"



The horizontal line may be called the *story line*. It tells a major idea that stands out in the mind of the reader. This major idea is not necessarily *the* major idea—as in standard outlining procedure—but intended for personal association, it may vary from individual to individual. Some students use chapter titles as guides for the story line.

The vertical lines are *idea lines*. They indicate specific occurrences in the chapter that relate to the major

Art by Dennis Ziemienski

idea and enhance the memory. Both story line and idea lines are stated tersely, with unnecessary words eliminated. (Students need not bother making sentences.)

The book recall stick should be written up as soon as possible after reading the chapter and always before going on to the next. In returning to a book to take up reading somewhere in the middle, a student would very likely benefit from a brief review of the recall sticks for previous chapters.

After students get accustomed to the form and mechanics of the book recalls, they may be encouraged to be systematic about arranging the idea lines in sequential order from left to right down the story line. It is also a helpful practice to keep all recalls for a book on the same sheet of paper for continuity.

Book recalls are essentially review and memory-aid devices, but they also have implications for basic study skills. And you find you don't have to spend half the class time drawing out and reconstructing a synopsis of "what happened in chapter five."

Idea by: Robert A. Pauker, West Hartford Schools, West Hartford, Conn.

WOW (WORDS OF THE WEEK)

Vocabulary building can be more effective if it's a do-it-yourself job. When students are responsible for picking words to learn, interest in learning them may be higher. (And calling the vocabulary project WOW seems to help too!)

The WOW literally come out of the students' reading. Students are given time each day to do some reading in newspapers and magazines, noting unfamiliar words. Up to three of these new words are underlined and cut out in context—a paragraph, a caption with its picture. The clippings are pasted into each student's own WOW notebook; then the underlined words are looked up in a dictionary and the definitions written in the notebook next to the appropriate clippings.

Weekly check-ups on the WOW may reveal that the acquisition of new vocabulary is definitely on the increase. And the WOW notebooks, with defined words in context, become more valuable as each week goes by.

Idea by: Elizabeth Maniaci, Cedar Grove, N.J.

NOT STRICTLY FOR LAUGHS

What language form provides for reading with closure, aids understanding of multiple meanings of words, motivates listening, offers materials for enjoyable oral language experiences and is only two sentences long? The riddle, of course.

Check the library for some riddles in books, search your memory for others, and make up a few to fill out a good-sized collection. Then divide the riddles into several sets of ten or so. (You don't want the whole class exposed to the same riddles, or sharing them later won't be so much fun.)

Make up worksheets with riddle questions on one side and the answers in random order on the other. Students read both sides, looking for clues that will help them match up the questions and answers. (The project could also be set up at a center with questions and answers on separate cards to be paired.)

Let the kids know ahead of time that a riddle show is coming up sooner or later so they won't pass jokes on prematurely. (And the nature of kids and jokes being what it is, the show should be sooner rather than later.)

Pair up kids who've solved the same riddle sheet and let each "comedy team" entertain the class in the style of an old-time vaudeville show. The more they ham it up, the better the show, the more satisfying for the performers and the more likely that riddle solving will be called on for repeat performances.

Idea by: Bill Olson, Fargo, N. Dak.

COOPERATIVE COMPOSITION CORRECTION

Students learn to write by writing, but what about the problem of providing feedback on the tons of output you've encouraged? With appropriate preparation, the students can help with that responsibility.

Through discussion, establish guidelines, based on composition classwork, as to what to look for in an essay—both in terms of mechanics and content. Discussion can also bring out how people may feel when corrections are written on a composition, and how criticisms might be made in helpful and respectful ways.

Fairly small heterogeneous review groups can be set up. After each student has prepared a first draft, double spaced, all members of his or her own review group read the paper and all other papers in that group. Each reviewer pencils in corrections and suggestions using the spaces between the written lines. Students may need to be reminded that they should not suggest changes unless they're sure those changes will be correct; this may lessen the arguments and the incidence of correctors correcting the corrections of other correctors. Spellings, of course, may be verified with dictionaries. And since each student is going to be getting back a marked-up paper, reviewers may be more careful about how corrections are made. Each reviewer initials the manuscript before handing it on.

When all students have their own papers back, they rewrite and revise them, incorporating corrections made by their peers. Both the originals and the rewrites are submitted so that you may check on the "judges" as well as on the improvements the author made.

Review groups may also serve as troubleshooting agencies, keeping track of errors that seem to be common in the group's work—things that perhaps need to be taken up in some special language class session. Literary critics? Curriculum planners? You have some valuable personnel in that class!

Idea by: Sister Mary Laubacher, Diocese of Lansing, Mich. ■

Learning magazine will pay $25 for original teaching ideas selected for publication. Suggestions will not be returned, so you may wish to keep a copy of your idea for future use. Limit your item to 600 words and submit it, along with a stamped, self-addressed response envelope, to: Swap Shop, *Learning*, 530 University Avenue, Palo Alto, CA 94301.

THE LEARNING CENTER

Thumbs Up

Materials for teaching language arts and reading constitute this month's Thumbs Up department.

PICNIC OF SOUNDS: A PLAYFUL APPROACH TO READING

Listen!

Lamb chops, pork chops, and
chocolate chips.
Step right up and wet your lips.
Chew! Chomp! Chew and chomp!

Those are the first three lines of a 12-line playlet for choral reading by kids. Can you imagine a less painful way of becoming familiar with the *ch* sound?

The 57 choral readings in this 127-page book by Lillian A. Buckley and Albert Cullum each stress a single letter or sound, though they are by no means designed to be tongue twisters. The readings are grouped into four sections: consonants, long and short vowels, blends and digraphs.

Every playlet consists of about 10 to 15 lines which are read alternately by individuals, several kids, half the class or the whole class. The readings are sometimes loud and strong, sometimes soft and enchanting, and always full of vitality and great fun.

Almost all the playlets are of the nonsense genre, but not all are silly. They avoid messages and delight purely in the sounds, rather than in the content, of language.

Along with each playlet are excellent suggestions for interpretation, enrichment and simple staging. Naturally the readings can be used in many ways and for many purposes—from choral speaking to reading practice to creative writing.

Picnic of Sounds makes for delightful fun—for kids, teachers and parents. **Order from:** Citation/Scholastic, 906 Sylvan Ave., Englewood Cliffs, NJ 07632. **Grade level:** Primary–intermediate. **Cost:** $3.95, paper; $6.95, hardcover. Teachers may deduct a 25% discount.

GAMES FOR SECOND LANGUAGE LEARNING

Within the pages of this slim, 57-page paperback are packed 74 sets of directions for basic language learning games and activities. Author Gertrude Nye Dorry has compiled a selection of tried-and-true games along with some less-well-known ones that can be used by teachers of second languages, in primary language arts instruction or by remedial language teachers.

The games have been grouped into seven chapters: numbers (for learning names of numbers), spelling, vocabulary, structure-practice, pronunciation, rhyming and miscellaneous. Many of the games in one section can be used to serve more than one purpose.

Competition is a factor in many of the activities, but teachers can easily eliminate or reduce that element. In a game called "Broken Words," for example, groups of students receive sets of cards with halves of words written on each card. The groups must put the halves together. The group that completes the task first is the winner. Competition, in this case, could simply be disregarded, turning the activity into a group exercise. The cards created for this game are also the makings for an independent learning center activity.

Games for Second Language Learning contains an index which tells how each game is played and its level of advancement (elementary, intermediate or advanced, with many games spanning several levels). **Order from:** Webster/McGraw-Hill, Princeton Rd., Hightstown, NJ 08520. **Grade level:** Teachers of primary grades. **Cost:** $1.13 (includes teacher discount). Add 4% for postage and handling.

PEABODY ARTICULATION DECKS

The title sounds lethal, but the ten decks of word-picture cards in this set have a variety of interesting language uses. Designed for kids with problems in articulation, the decks can be used effectively with early primaries to develop reading and language skills.

The decks contain pictures usually with single-word captions that represent commonly misarticulated consonants or consonant blends. Deck 5, for example, has pictures of such things as a lamp, an umbrella and a wheel for practicing the *l* sound. Words have been chosen so that the

Art by Dennis Ziemienski

Thumbs Up is our way of spreading the good word to readers of *Learning* about teaching materials that are of high quality and low cost—usually under $20.

All products listed in this department are "no-risk" items. Suppliers will either send examination copies or refund payment if the product fails to meet your specifications and is returned in salable condition.

Cost figures are those quoted to us at the time of final review. There is always the possibility that prices may change, so be prepared.

The grade level designation at the end of each review is determined by the *Learning* staff and may differ from the producer's suggestion.

Availability of Fabulous Freebees items is verified only for month of publication. Since stocks of material are sometimes limited, we suggest that readers interested in a specific product take early advantage of the offer.

particular letter comes up in a number of different positions.

Many of the pictures contain two key sounds and reappear in the different decks. For example, *robot* appears in both the deck with the *r* sound and the deck with the *b* sound. Kids will come to identify the same picture and word, but they must concentrate on different sounds within the word.

Six possible games are described in an accompanying teacher's manual. Two of the games call for materials not included in the kit, but teachers can adapt them without the need to purchase additional items. The manual also has appendixes which point out the key letter or sound in each deck and tell the position of the sound in each word.

The decks should be used by individuals or small groups working, at least initially, with a teacher. Kids can use them alone when they have learned the games.

This is clearly not an earthshaking product, but it is academically sound, and kids will learn from and enjoy using the cards.

Order from: American Guidance Service, Inc., Publishers' Bldg., Circle Pines, MN 55014. **Grade level:** Primary. **Cost:** $24 (ten decks with teacher's manual and case); $2.25 per deck; $1.00, teacher's manual. Add 8% for postage and handling.

THE BIG BOOK OF WRITING GAMES AND ACTIVITIES

It's difficult to describe *The Big Book* as a book, though it is certainly a book of sorts. It has pages, chapters, a table of contents and a few other booklike features, but the pages are huge (measuring 12-by-18 inches), and all are perforated for tearing or punching out. It's more a container than a book.

Written by Sandra Nina Kaplan, Sheila K. Madsen and Bette Taylor Gould, *The Big Book* contains a hodgepodge of supplementary activities for teaching letter writing, reporting, prose and poetry, technical writing, advertising and journal writing to intermediates.

In each chapter are things for kids to do that involve writing skills. For instance, in the chapter on technical writing is a set of colorful "Step-by-Step Cards" for writing directions. Each card contains several illustrations in separate panels of something being done in sequence, e.g., baking cookies, growing a plant. Kids look at the pictures and write about what is happening in each panel.

Many of the materials in the book can be punched out for kids to handle and manipulate. Some of the pages are meant to be used as the basis for learning centers.

The manipulative approach as used here is clearly gimmicky, but it works because the activities are fun for kids to do. However, the book has flaws that should be considered. The section on business letters consistently uses commas instead of colons in the greetings of letters, and the organization of the book, though designed to be freewheeling, sometimes makes it confusing to use.

The Big Book, though planned for independent use by kids, requires teacher supervision or involvement for most effective use.

Order from: Goodyear Publishing Co., 15113 Sunset Blvd., Pacific Palisades, CA 90272. **Grade level:** Intermediate. **Cost:** $14.95.

MASS MEDIA

Newspapers. Radio. Television. Magazines. Advertising. *Mass Media*, a box of 120 four-by-six inch activity cards, is not a study of communications systems but a resource that draws upon the above named media to involve kids in language arts activities.

Each card contains a separate assignment that may require kids to read, write, research, compare or do one of several other language-related activities. The concisely written assignments are intended for intermediate level students. While some projects either require or can be adapted to long-term study, most are short-range. One of the newspaper assignments, for example, gives three interesting headlines—"Bottom Fell Out of Florida Lake," "16 City Jobs Are Desexed," "A Banana Split 300 Feet Long"—and asks kids to choose one and write the story behind it, keeping in mind the "five W's."

The set is indexed by the five different media. The smallest section contains 16 assignments; the largest has 44. The activities generally provide for solid learning experiences; only a few disappoint.

Order from: Creative Teaching Press, 1900 Tyler Ave., Suite 22, South El Monte, CA 91733. **Grade level:** Intermediate. **Cost:** $6.95 plus $1.00 for shipping and handling.

Fabulous Freebee

FACSIMILE OF *THE CONNECTICUT COURANT*

No sooner does a news event take place than we hear about it either on television or radio or read about it in the morning paper. But there was a time when news traveled at a snail's pace. News of a battle won or lost on another continent had to be sent by boat instead of an Associated Press wire or a telephone.

The facsimile of *The Connecticut Courant* (now *The Hartford Courant*), dated October 29, 1764, makes this and other changes in news reporting over the past 200 years very plain to see. This four-page edition, printed on legal-size newsprint, includes the news of the hour as well as information about events that took place over three months prior to the date of publication.

The news contained in this issue —apparently the first published by the paper—is not terribly exciting but makes for fascinating reading. Intermediate level kids will be able to pick out the changes in use of language, spelling and typography and methods of reporting between then and now.

The facsimile will interest language arts classes studying current events and journalism and social studies classes involved in American history.

Order from: Facsimile, *The Hartford Courant*, Hartford, CT 06115. **Grade level:** Intermediate–high school. Only requests with an enclosed stamped, self-addressed envelope will be honored.

Sights and Sounds

A WALK IN THE FOREST

More than merely "a walk in the forest," this 28-minute film explores with words and beautiful, sometimes startling, color photography the moods and seasonal changes of the forest. What begins as a fairly typical nature film becomes a poetic excursion through the woods that envelops the viewer.

The film shows the interactions of animals with each other and with such natural elements as water and light. In a particularly dramatic episode, a fire sweeps through the forest, scattering the animals and disfiguring the landscape.

Throughout the film, man wanders in and out of the forest to replenish and protect it—scaling tall evergreens to harvest and sprout the seeds, and returning the saplings to the forest; putting out the flames that destroy the serenity of the forest.

The film explains that man must interact with the forest and act as its guardian if the forest is to survive. Man has, in reality, incorporated himself into the forest's daily rhythms to protect the forest from those who do not care. But showing man in the role of protector also raises a problem in this context. Since everything appears under complete control on the film, it seems that man can now rest easy. But in truth, a constant vigil—not only by the lumber companies and the forest service—is critical if we are to maintain the natural patterns and cycles of the woods that the film so poetically captures.

With teacher-led discussions about all sides of the story, the film is ideal for language arts and science classes. **Order from:** Pyramid Films, Box 1048, Santa Monica, CA 90406. **Grade level:** 5–high school. **Cost:** $32, rental; $375, purchase.

VISUAL COMMUNICATION SKILLS

In a sophisticated, straightforward treatment, this set of four sound filmstrips highlights the role and the mechanics of visual perception.

Beginning with a historical overview of visual communication, the strips move on to explain many of the basics of visual communication, including such information as how use of pictures and personal affect influence our perception of images. One of the strips, "Seeing, Believing, and Questioning," presents fascinating optical illusions to further explain technical aspects of vision.

The choice of vocabulary, the style of presentation and the level of the ideas make this set most appropriate for students in junior high and above. The filmstrips are equally oriented toward the subject areas of science and language. Students who are able to spend the time absorbing the information presented here will undoubtedly come away with a better understanding of the nature of visual communication.
Order from: Teaching Resources Films, 2 Kisco Plaza, Mt. Kisco, NY 10549. **Grade level:** Junior high–high school. **Cost:** $55, records; $59, cassettes.

Open Bookshelf

PAPERBACKS

TUCK EVERLASTING
by Natalie Babbitt

Bantam is introducing a new Skylark paperback series, and Babbitt's book is the cream of the crop. A captivating book by a word wizard, this story of the unusual Tuck family, who drank from a magic spring and found immortality, is exciting, funny and thought-provoking by turns.
Order from: Bantam Books, Educational Services Dept., 666 Fifth Ave., New York, NY 10019. **Grade level:** 3–6. **Cost:** $1.75.

THE DARK IS RISING
by Susan Cooper
Illustrated by Alan Cober

A Newbery Honor Book, this is the second in an important quintet about the struggle between ancient forces of the Dark and the Light come to life in present-day Great Britain. The excitement in this one takes place during the 12 days of Christmas. Hauntingly told.
Order from: Atheneum Publishers, The Book Warehouse, Vreeland Ave., Totowa, NJ 07512. **Grade level:** 4–8. **Cost:** $1.95.

WHO, SAID SUE, SAID WHOO?
by Ellen Raskin

Appealing animals—mooing, whooing and titter-tattering—crowd around Sue as she tools through the pages on her roadster in this excursion into rhyme and wordplay. Raskin's charming illustrations make this Aladdin picture book a terrific language arts resource.
Order from: Atheneum Publishers (address above). **Grade level:** K–2. **Cost:** $1.95.

SQUAWK TO THE MOON, LITTLE GOOSE
by Edna Mitchell Preston
Illustrated by Barbara Cooney

This classically simple animal tale concerns a young and mischievous goose, a wily fox and the traveling moon—illustrated skillfully in deep blues and golds. A Viking Seafarer book.
Order from: Viking/Penguin, Inc., 299 Murray Hill Pkwy., East Rutherford, NJ 07073 or call toll free 800-631-3577. **Grade level:** K–2. **Cost:** $1.50.

A BILLION FOR BORIS
by Mary Rodgers

Fourteen-year-old Annabel Andrews narrates this engaging fantasy about an eccentric mom who can't manage money and a kid brother who fixes a TV set so that it can forecast the future. It plays tomorrow's news today. A Harper Trophy Book.
Order from: Harper & Row, Scranton, PA 18512. **Grade level:** 4–6. **Cost:** $1.50. ■

THE LEARNING CENTER

READING & MATH SUCCESS

DEVELOPING VOCABULARY

by Robert L. Hillerich

Let's face it: Vocabulary development is—or at least ought to be—a lifetime job. However, in terms of the teaching of reading, this job can be broken down into three basic stages. First is the oral level necessary for success in initial reading instruction. This is the level usually developed in the preschool or kindergarten years. The second stage is the one in which a basic recognition vocabulary is developed for beginning reading. The third is the expansion of the oral and reading vocabularies that takes place at higher grade levels and through adulthood.

Oral Vocabulary. Estimates of the oral vocabulary of the typical five-year-old run as high as 20,000 words. Most youngsters enter kindergarten with an oral vocabulary more than ample for beginning reading. However, any diagnostic approach to instruction should lead the nursery school or kindergarten teacher to begin by identifying those children who do not have adequate oral vocabularies. This can be done by sampling the two kinds of words youngsters ought to have meanings for: the structure words and the form class words.

While no one can say precisely which are the words that must be part of a child's vocabulary before that child begins reading, a sampling of structure words ought to include such words as *in, on, under, big, little, top, bottom.*

Identification of the specific form class words is even more nebulous. The teacher may collect several dozen pictures of common objects in a variety of categories on the assumption that all children have been exposed to those names. Pictures might include common foods, articles of clothing, animals and so on, to sample each youngster's vocabulary.

For the child who has a limited vocabulary, the implication for instruction ought to be obvious. The teacher will need to provide concrete experiences for this youngster. In terms of the structure words, experiences in manipulating objects can be devised—putting the object *in (on, under)* a toy truck or train. "Simon Says" can be played. If a large packing crate is available, the child can be the object and call out, "I am *in (on, under, behind)* the box."

In terms of the form class words, the teacher needs to develop activities in which the child gets plenty of opportunity to deal with the words and later to talk about his experiences. Passive listening is not enough. We know, for example, that the typical five-year-old who has watched television is about one year more advanced in vocabulary development than those who did not watch television; however, if youngsters don't have opportunities to talk about what they have seen, that vocabulary is very flat; it is a passive vocabulary and not a part of their operating speech.

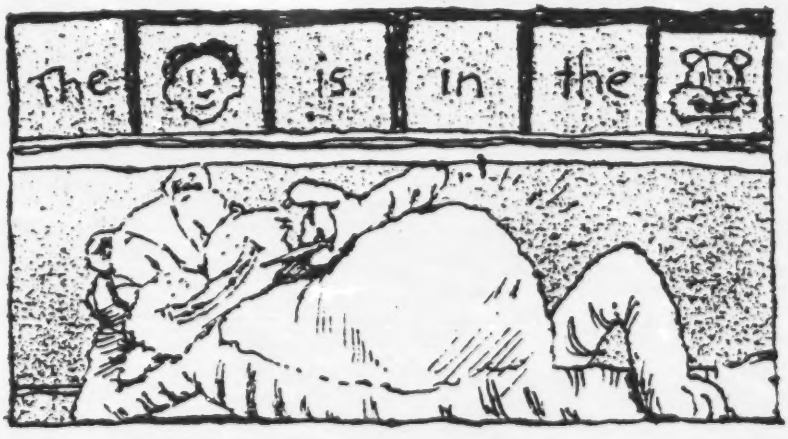
Initial Recognition Vocabulary. The recognition vocabulary consists of those words in print that can be named instantly without the need for any kind of analysis. Regardless of age, any individual at the beginning level of reading must have some recognition vocabulary. Without such a vocabulary, there is no context to use in unlocking strange words —all words are strange.

A limited recognition vocabulary is one of the most common symptoms with older disabled readers. They are on a circular treadmill: They dislike reading, so they don't read, and they fail to develop familiarity with printed words; reading remains difficult, so they dislike reading even more.

In developing a basic recognition vocabulary, it should be stressed that there are a very limited number of words worth teaching as words. Just three words—*I, and, the*—make up 10 percent of all the words used by adults in writing. The ten most frequently used words make up 25 percent of all words on a printed page. Obviously the individual who can recognize only those ten words can read a fourth of all the words in any English book, from *The Cat in the Hat*, to *Jaws*. This is a tremendous return for very few words. On the other hand, once one gets beyond the first hundred most frequently used words, there is a point of rapidly diminishing returns, because the one-hundredth word is used only a fourth as often as the most frequently used word.

Any nonreader, regardless of age, should begin by working with about eight of the most frequently used words. These eight words *(the, a, is, was, in, on, and, it)* account for 18 percent of all words on a printed page. They are also more difficult for beginning readers to remember because they have no semantic meaning. After one exposure, a child is likely to remember *tyrannosaurus*, but *was* may require a hundred exposures.

In keeping with the philosophy of reading for understanding, only a few of these words should be introduced at a time, e.g., *the, is, in* might be introduced first, and for typical children this would take place in nursery school or kindergarten. Using a pocket chart, the teacher may then make a rebus sentence, with word cards for *the, is* and *in*, and picture cards for the subject and object of the preposition. The sentence might read: "*The* (picture of cat) *is in the* (picture of tent)." After several children have had an opportunity to read the sentence, they may make new sentences by changing the pictures. Very soon, some youngster is going to set up a sentence such as "*The* (boy) *is in the* (tiger)," and



Art by Dennis Ziemienski

Reading & Math Success

(continued)

a rash of nonsense sentences will follow. Children think they are playing a joke on the teacher, but in reality they are doing exactly what they need: they are seeing the same words over and over in a meaningful (to them) context.

Youngsters who have control of the mechanics of handwriting should try making rebus sentences of their own. We know that writing reinforces recognition vocabulary.

Isolated drill with flash cards ought to remain a last-ditch effort, reserved for such cases as the older nonreader who still can't recognize the word *the*. Then we pull out all stops and have that student trace the word, write the word, see it on flash cards and so on.

Extending Vocabulary at Higher Grade Levels. Evidence suggests that the best way to develop oral vocabulary or to expand recognition vocabulary is to experience words over and over in a variety of contexts. We do not increase working vocabulary with dictionary drills. Besides, anyone who sets out to increase vocabulary on a word-by-word basis is fighting a losing battle: the first hundred words in frequency of use account for over 55 percent of the occurrences of words in English; the remaining 45 percent consists of a body of over 450,000 words. Which of these will be taught?

At upper grades and middle school level, some vocabulary development can be accomplished through instruction in affixes. Even here, there are a very limited number of prefixes and suffixes that are frequently used and consistent enough in meaning to be worth teaching.

Among the prefixes are *com-, extra-, in-, intra-, mal-, mis-, non-, syn-, un-*; and the Greek combining forms such as *auto-, bio-, micro-, mono-, phono-, photo-, pseudo-*.

Although most endings merely indicate parts of speech, some carry meaning. Those to be taught include the noun endings *-archy, -gram, -graph, -meter, -ology, -scope*; and the adjective endings *-less, -able, -like, -ful*.

The instructional procedure is to provide students with a word or two having the given affix. Then let them (1) find several additional words with the same affix, (2) deduce the meaning of that affix, (3) check the dictionary, (4) try using the affix to build new words, and (5) check the dictionary for these.

In addition, content teachers should introduce technical terms in advance of reading. Such introduction and discussion provides yet another context to help make such terms more meaningful when students meet them in the text.

In conclusion, we are suggesting that—beyond a limited number of basic words—children learn vocabulary by reading and more reading.

Robert L. Hillerich is associate professor of education at Bowling Green State University.

PUTTING TOGETHER AND TAKING APART

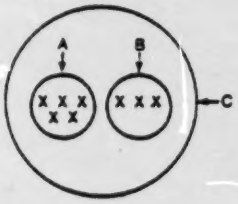
by Randall J. Souviney

On a recent visit to a first grade classroom, I wandered to the back of the room where a group of children were being entertained by the class hamster. A discussion ensued over

the relative merits of being inside the cage as compared to being outside. At this point in the conversation the students had no difficulty ascertaining what was "inside" and what that entailed. Meanwhile the hamster played to the audience by jumping on the exercise wheel and running up to about 100 rpm. I asked a child what the hamster was up to now, and she replied, "He's in the wheel." Then I asked if the animal was inside the cage, and the girl declared that the hamster was in the *wheel*, not in the *cage*! The children argued both sides of the issue, and no amount of explanation or lobbying could provide consensus on the matter.

Why did some children remain unconvinced that the hamster was inside both the cage and the wheel at the same time? The answer relates to a concept called *set inclusion*. Consider the following situation:

If there are five objects in set A and three in set B, how many objects are in the all-inclusive set C?



A child unable to deal with set inclusion may be convinced that set C is empty, suggesting that the objects are in sets A and B, not in C. Just as in the puzzle of the hamster cage, the child is not able to keep the whole set and its parts in mind at the same time. Whether or not a child effectively understands set inclusion is a fundamental issue in planning for meaningful experiences with addition and subtraction.

The situation in the above illustration is frequently used as a model defining the operation of addition: $5 + 3 = 8$. Clearly this model is not appropriate for a child unable to demonstrate a clear understanding of set inclusion.

The First Step Is Diagnosis. A simple diagnostic task designed to indicate whether a child is cognitively ready to be introduced to symbolic addition and subtraction is one that assesses the child's understanding of set inclusion. Display 12 identically shaped wooden beads, three white and nine blue. In a one-to-one interview situation ask the child, "If you made a necklace using all the blue beads and another necklace using all the white beads, which necklace would be longer?" Assuming the child has had prior experience comparing lengths, he should make the correct response. Next ask: "Which necklace would be longer—one made from all the blue beads or one made from all the wooden beads put together?" A child unable to correctly respond to this question may not understand the concept of set inclusion. The introduction of symbolic addition or missing addends prior to this understanding may have little meaning for the child.

Activities in which objects are counted and classified and where quantities are compared and combined can help develop an understanding of set inclusion and can therefore provide a much more effective use of the child's time. Such concrete activities are especially important for the first grade teacher, since a good number of six-year-

olds are unable to respond correctly to the necklace problem. (By age seven most children will solve it easily.)

Along with a poor knowledge of basic facts, a lack of understanding concerning place value is the source of many problems students have with addition and subtraction. Even though a concrete place-value model may have been introduced to assist the child in thinking about place value, it may have been introduced too early in the child's development or perhaps not used long enough to provide a strong conceptual base. To quickly assess a child's understanding of the important role position plays in the value we assign to a numeral, ask: "Which digit in the number 27 represents the largest value, the 2 or the 7?" A child who has a good understanding of place value will respond that the 2 represents substantially more than the 7. A child choosing the 7 requires additional experiences with concrete activities involving place-value concepts. The following activity provides an example of such an experience.

Subtraction by Regrouping Concrete Materials. Student-constructed tile materials—comprising quantities of single tiles (ones), strips of ten tiles each (tens), and tile "rafts" of ten strips (hundreds)—can be used to investigate subtraction with regrouping. (Children should, of course, have spent time using these materials —counting out and trading equal quantities among the denominations —before moving into regrouping activities.)

Design a cardboard organizer for subtraction (see Illustration 1). Row A is for the minuend. The extension of Row B is for the subtrahend. The subtraction process involves actually taking out of Row A the number specified in the subtrahend and bringing that quantity down to Row B. The remainder, the answer, is brought down to Row C.

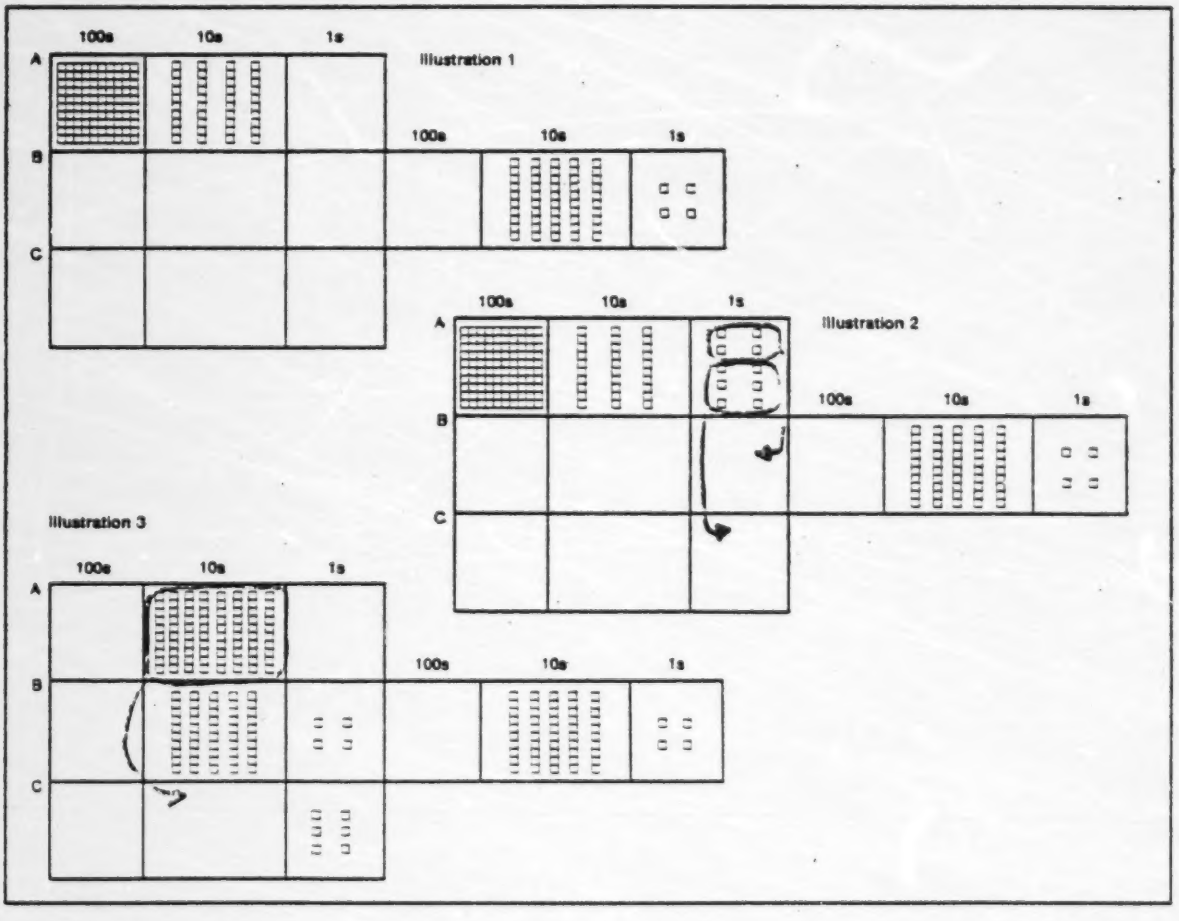
This organizer is set up for 140 minus 54. The 140 is laid out in Row A; the 54 in Row B extension. The first move is to bring down the number of ones indicated in the 54 from the ones place in the 140—that is, we need to bring down four single tiles.

Since there are no single tiles in Row A, we need to exchange one of the four tens strips for ten single tiles. Then four tiles can be brought down to Row B, and the remainder moved to Row C (see Illustration 2).

Regrouping is also needed in the tens place, since only three strips are left and five are called for. The hundreds raft must be exchanged for ten strips to supply the two additional strips required. Eight strips will be left after the five are brought down. These go to Row C (see Illustration 3). Bringing down ends when Row B matches Row B extension and Row A is empty. The remainder, the answer (in this case, 86), will appear in the bottom row.

Only after considerable experience with concrete models should students be encouraged to record results of manipulations in symbolic notation. Such experiences—provided through a variety of materials and techniques —are needed to facilitate the development of the mental models upon which real learning depends. ■

Randall J. Souviney is supervisor of Teacher Education at the University of California, San Diego.



MORE ON SCORES

The now-famous decline in SAT scores is vexing educators and parents and has researchers feverishly searching for remedies. But now comes a theory which could be good news for teachers under pressure to raise achievement test scores.

Robert B. Zajonc of the University of Michigan predicts a rise in SAT scores by 1980. Zajonc and colleague Gregory Markus pose the theory, based on data from dozens of studies, that intellectual ability depends on the number of family members and their ages. Children born close together in large families just aren't as smart as children born further apart in small families. And in both kinds of families, the oldest child is generally the brightest.

How does this data relate to the drop in scores? In the early '60s, when many of the students taking the tests were first- and second-born children born during the war, the SAT scores reached a peak. The decline in scores reflects the increased family size of the postwar years and the students' later birth orders. By 1980, however, the children born in the early '60s (more first-borns from smaller families) will be ready to take their SATs. Zajonc figures that scores will rise accordingly.

LAST ONE OUT

"A principal in Maine recently clocked the rate at which his pupils responded to the fire drill bell. It took the kids four minutes, thirteen seconds to evacuate the building. Later the same day, he clocked them when the closing bell rang. It took them one minute, forty seconds to clear the building that time. There's a moral there someplace."

—From *What's Going on Here*, a publication of the Springfield (Ore.) Public Schools

SHORT STUFF

AND THE WINNER IS . . .

Action for Children's Television, a national citizens group that keeps a close watch on the broadcasting industry, has once again presented its annual Bent Antenna Awards. This year the Marie Antoinette "Let 'em Eat Cake" Award goes to the Federal Trade Commission for "continuing to allow cake, candy, and supersweet cereals to be advertised on children's television despite warnings that such highly sugared products may be dangerous to a child's health."

—*NAEB Newsletter*

WORD MAGIC

"When I was about ten I once had to mind the little boy next door, who was about three. He wanted to know what the flowers in the front yard were. I told him they were hydrangeas, and this word, which came out something like 'hyainzuz,' he repeated all afternoon, chuckling to himself at intervals. Many years later I realized that I had confronted that afternoon one of the primary phenomena of literary education. It is the rare magic word, the mysterious polysyllabic word, that is most likely to become the educational focus, the beckoning light ahead: similarly, it is the magic story, not the imaginatively squalid story, that is most likely to start the quest for awareness going."

—Northrop Frye in the foreword to *The Child As Critic: Teaching Literature in the Elementary School* (Teachers College Press, 1975)

READING

I take it you already know
Of tough and bough and cough and dough?
Others may stumble, but not you
On hiccough, thorough, slough and through?
Well done! And now you wish, perhaps,
To learn of less familiar traps?

Beware of heard, a dreadful word
That looks like beard and sounds like bird.
And dead; it's said like bed, not bead;
For goodness sake, don't call it deed!
Watch out for meat and great and threat,
(They rhyme with suite and straight and debt).
A moth is not a moth in mother.
Nor both in bother, broth in brother.

And here is not a match for there,
And dear and fear for bear and pear,
And then there's dose and rose and lose—
Just look them up—and goose and choose,
And cork and work and card and ward,
And font and front and word and sword.
And do and go, then thwart and cart.
Come, come, I've hardly made a start.

A dreadful language? Why, man alive,
I'd learned to talk it when I was five.
And yet to read it, the more I tried,
I hadn't learned it at fifty-five.

—Author unknown. From *Perspective*, the newsletter of the Philadelphia public schools

MAKING HISTORY

When eighth grade history teacher Frank Chesarek found out that "a state with 30,000 kids of junior high age didn't have a decent text for Montana history," he decided his class should write its own. Superintendent John Smith of Lolo School near Missoula brought the idea of a student-authored textbook to the school board and the Montana Bicentennial Administration.

Pleased with the idea, the groups gave Chesarek funds for printing, a trailer to work in and the money to hire a project coordinator, Rachel Vielleux, who organized the research of the 41 young historians. "We wanted to stimulate their interest in the state," said Vielleux, "rather than stunt it by a boring, traditional text approach."

Students wrote county commissions requesting information on resources, historic places and famous people. To follow up on their research, they visited sites.

Local history buffs responded to the project by making presentations to the class about historic characters or delivering old photograph albums. But the work was done primarily by the students. "Who knows more about what students find interesting in history than students?" said Chesarek.

Classroom Grandparents

Unlike previous generations, children of today's nuclear family have little opportunity to relate to the elderly. Grandparents are no longer available, in most cases, for companionship and advice; they are no longer called upon to share their wisdom, experience, values and concerns with the very people who might most benefit from their knowledge and talents.

The Parkville Elementary School in New Hyde Park, New York, has been doing something to change all that. For the past five years, they have been sponsoring a unique "Grandparents Program." The "grandparents" are recruited through local Golden Age clubs and senior citizen centers. They come into the classroom on a volunteer basis one or two days a week. Each is assigned one teacher and one classroom for the entire year, then stays on with that teacher and adopts a whole new class full of "grandchildren" the following year.

After several years, one grandparent may find himself with literally scores of grandchildren. And by the fifth grade, the children are delighted to have not just one but five or more grandparents.

—Warren Jorgensen

What Kids Think of Reading

Interviews with elementary students indicate that most children regard reading as "an oral activity which involves the pronunciation of words," reports Duane R. Tovey of Ohio State University in a recent issue of *The Reading Teacher*.

◆ Only 28 percent of the 30 children Tovey interviewed thought reading had something to do with meaning. The remaining 72 percent used expressions like "looking at words," "pronouncing words," "spelling," "talking" and "breathing" to describe reading.

◆ When given the opportunity to read silently or orally, only six students chose to read silently. Such a response, suggests Tovey, "infers that children have been conditioned to think of reading as reading to someone, not silently communicating with an author."

◆ Although most of the children tested could obtain meaning without processing every letter or word, 70 percent favored looking at each word when reading and 59 percent thought they should look at each *letter*.

◆ Twenty-eight children (93 percent) used the sound-symbol cue system as the *only* strategy for decoding print. "Sound it out" and "divide it into syllables" were the most common responses.

"This study strongly implies," concludes Tovey, "that teachers are using the 'word recognition equals reading' model." Children should be encouraged instead, he says, "to think of reading as a predictive process of using the fewest cues necessary to derive meaning silently from print" and to "make full use of syntactic and semantic cues." ■

Gifted and Talented Education:

Resource Materials

Program Planning & Evaluation

Curriculum Aids

Material for Parents of a Gifted Child

Standardized Test/Instrument Suggestions

Compiled by
Educational Improvement Center
Pitman, N. J. 08071

Program Planning and Evaluation

Gifted and Talented Children: Practical Programming for Teachers and Principals by Dorothy F. Syphens, Council for Exceptional Children, Reston, Virginia $2.25

Providing Programs for the Gifted and Talented by Sandra Kaplan,* NS/LTI/G&T. $6.45

A Guidebook for Evaluating Programs for Gifted and Talented by Joseph Renzulli,* N/S-LTI-GT

The Enrichment Triad Model: A Guide for Developing Defensible Programs for Gifted and Talented by Joseph Renzulli. Creative Learning Press, 530 Silas Deane Highway, Wethersfield, Ct. 06109

Developing a Written Plan for the Education of Gifted and Talented Students. by Irving Sato, M. Birnbaum, etc.* N/S-LTI-G/T. $3.00

Identification of Gifted and Talented: An Instructional Syllabus by Ruth Martinson.* N/S-LTI-GT. $6.05

Principles, Objectives, and Curriculum in the Education of Mentally Gifted Minors K-12 by Calif. State Dept. of Education, 721 Capitol Mall, Sacramento, Ca. 95814

Programs for Gifted: A National Survey by Theodore Gourley, etc. EIC/S, P. O. Box 426, Pitman, N. J. 08071. $3.25

Programs and Services for the Gifted available from Superintendent's Office, Board of Education, Chicago, Ill.

Gifted and Talented: An Identification Model by Cornelia Tongue and Charmian Sperling. available at EIC/S. P. O. Box 426, Pitman, N. J. 08071 $.70

The Gifted and The Talented by Roger Taylor, Director, Area Service Center for Educators of Gifted Children, Governors State University, Park Forest South, Illinois 60466.

*N/S-LTI-G/T refers to National/State Leadership Training Institute on Gifted and Talented, Office of the Ventura County Superintendent, Ventura, California 93001

Curriculum Aids

Everyday Enrichment for Gifted Children at Home and School by Herbert Kanighe, published by National/State Leadership Training Institute on Gifted and Talented, Office of the Ventura County Superintendent, Ventura, Ca. 93001

100 Activities for Gifted Children by Paul Meredith & Leslie Landin. Fearon Publishers/Education Division, 6 Davis Drive, Belmont, Ca. 94002. $1.00

Creative Activities for the Gifted Child by L.B. Hopkins and A.F. Shapiro. Fearon Publishers

Promising Practices: Teaching the Disadvantaged* N/S-LTI-G/T. $2.70

A Guide to Better Teaching for the Gifted by Ruth Martinson *N/S-LTI-G/T $3.00

Career Education for Gifted and Talented Students by Kenneth Hoyt and Jean Hebeler. Olympus Publishing Co., 937 East Ninth Street, Salt Lake City, Utah 84105 $5.95

Creative Reading for Gifted Learners: A Design for Excellence. by Michael Labuda International Reading Association, 800 Barksdale Road, Newark, Delaware 19711 $3.00

Making It Strange 1,2,3,4. Synectics, Inc. Harper and Rowe, N. Y. $1.35 per workbook; $1.35 per teacher's manual. Excellent for stimulation of creative work.

Can you Imagine, For Those Who Wonder, Invitations to Thinking and Doing, Invitations to Speaking and Writing Creatively, Plots, Puzzles and Plays. by R.E. Myers and E. Paul Torrance. Ginn & Co. 191 Spring St., Lexington, Ma. 02173

The Imagination Book and Me. Good Apple Inc. Box 299 Carthage, Ill. 62321.

Teaching Gifted Children by Dorothy Sisk. EIC/S, P. O. Box 426, Pitman, N.J. 08071 $1.00

Aftermath I, II, III, IV, Creative Publishers, P. O. Box 10328, Palo Alto, Ca. 94303. $8.00 for 4.

Science Curriculum Guide for Teaching Gifted Children Science in Grades 1-3; Grades 4-6; Grades 7-12. California State Dept. of Ed., Sacramento, Ca.

Classroom Ideas for Encouraging Thinking and Feeling by Frank Williams. D.O.K. Publishers, Buffalo, N.Y. 14214 $7.95

*N/S-LTI-G/T refers to National/State Leadership Training Institute on Gifted and Talented, Office of the Ventura County Superintendent, Ventura, California 93001

Curriculum Aids - 2

Yellow Pages of Learning Resources, MIT Press, Cambridge, Ma. 02142. $1.95
(Lesson plans for community resources)

Foxfire Books available in most bookstores.

A Handbook of Structured Experiences for Human Relations. by Wm. Pfeiffer & Jones. University Associates, LaJolla, Ca. 92037

Three Highly Useful Commercial Catalogs Available from the Vendor at No Cost:

American Library Color Slide Co., Inc.
P.O.Box 5810, Grand Central Station
New York, N. Y. 10017
(Contains the most complete list of color art slides available.)

Harry N. Abrams, Inc.
110 East 59th Street
New York, N. Y. 10022
(Leading publisher of illustrated art appreciation books in the nation)

Alva Museum Replicas, Inc.
30-30 Northern Blvd.
Long Island City, N. Y. 11101
(The company replicates statuary from great museums around the world.)

Creative Analysis (Paperback) by Albert Upton & Richard W. Samson E.P. Dutton & Co. 201 Park Avenue South, New York, N. Y. 10003 $6.50. Level: Intermediate and up. Availability: Kroch & Brentano (Contains a series of graded exercises designed to promote improved ability at analyzing, analogizing, defining, categorizing, and other intellectual functions.

536 Puzzles and Curious Problems (Paperback) by H.E. Dudeny; Edited by Martin Gardner, Mathematical Games Dept. of Scientific American. Charles Scribner's Sons Emblem Editions $2.95. Level: Intermediate and higher. Availability: Kroch & Brentano. (Contains every conceivable kind of puzzle except those requiring advanced mathematics. Many of the problems are tests of logic, categorization, and the perception of extended relationships.

Fun With Brain Puzzlers (Paperback) Title No. R476 by L.H. Longley Cook Fawcett Publications, Inc. 1515 Broadway New York, N.Y. 10036 Price: 60¢ Level: Intermediate & Upper Grade; Availability: Kroch & Brentano (Many puzzles feature use of alternative symbols in mathematics.

Games for the Superintelligent (Paperback) by James F. Fixx, Popular Library 600 Third Ave., New York, N. Y. 10016, 75¢ Availability: Kroch & Brentano Level: Intermediate & Upper Grade (Contains puzzles and riddles which can be solved by simple arithmetic and simple logic.

Curriculum Aids - 3

101 Brain Puzzlers (Paperback) by E.R. Emmet Barnes & Noble Books Division of Harper & Row. $1.75 Level: Upper Grade & High School Availability: Kroch & Brentano (Particular value of this listing is that it contains cross number puzzles which reinforce mathematical concepts.)

Puzzles, Games, and Individual Activities (A book of spirit gum masters) by Orville & Evelyn Rudolph, Hayes School Publishing Co., Inc. Wilkinsburg, Pa. $3.50 Availability: Teacher's Store 324 S. Wabash Ave., Chicago, Ill.. 60604. Level: Primary (Contains simple crossword puzzles for primary children.)

Games to Improve Your Child's English (Paperback-Exercises Teacher Resource) by Hurwitz & Goddard, Simon & Schuster (Fireside Book) $2.95; Level: all elementary; Availability: Simon & Schuster (Contains "games approach" to learning grammar, spelling and vocabulary building at all elementary grade levels.)

New Directions in Creativity (Series) (Books of Spirit Gum Masters) Mark I, Mark II, Mark III, by Dr. Joseph Renzulli, Harper & Row. $12. per book Level: Intermediate, Availability: Harper & Row (Each book contains a series of creative language arts activities. Only one of each book is necessary because the pages of each book consist of spirit gum masters. The activities in the book are constructed around Guilford's "Structure of the Intellect" model.)

SOI Workbooks (Five Workbooks and a Teacher's Manual) Memory Workbook (bound), Divergent Production Workbook (bound), Cognition Workbook (bound), Evaluation Workbook (bound), Convergent Production Workbook (bound), a Manual for Teachers by Mary Nacol Meeker, Institute for Applied SOI Studies, 1800 Highland Avenue, Manhattan Beach, California. Price: Convergent Production $3.50; all other workbooks $6.50. Manual for Teaching Teachers $5.00 Availability: Institute for Applied SOI Studies. Level: Primary and lower intermediate. (These materials were developed from Guilford's "Structure of the Intellect" theoretical model. It is advised that before ordering any of the materials in quantity, the teacher review them for specific program suitability. Copies of these materials can be seen at the Area C Gifted Office.)

Word Play (Paperback) by Maxwell Nurnberg, Dell Publishing Co., 750 Third Ave. New York, NY 10017 75¢. Level: Upper Grade & High School. Availability: Kroch & Brentano (Contains a series of exercises and games useful in vocabulary building, and reinforcing grammar and punctuation.)

Write On! (Student & Teacher Activity Cards) by Paulette Condos, Educational Insights, Inc. 211 South Hindry, Inglewood, California 90301. $5.95. Level: Intermediate; Availability: Teacher's Store, 324 South Wabash, Chicago, Ill, 60604. (Contains 50 Student Creative Writing Ideas and 70 Teacher Activities for creative writing.)

The Math Entertainer (Paperback) Title No. HW7049 by Phillip Heafford, Harrow Books Division, Harper & Row 95¢ Level: High School; Availability: Kroch & Brentano (Contains puzzles and riddles requiring the application of Algebra, Geometry, Trigonometry, and Calculus.)

Curriculum Aids - 4

Mathematical Puzzles for the Connoisseur (Paper back) Title No. A-316 by Kendall and Thomas. Thomas I. Crowell Company 1962 (Apollo Editions) 201 Park Avenue S., New York, NY 10003. $1.95; Level: high school Availability: Kroch & Brentano (Contains puzzles and riddles requiring the application of Solid Geometry, Trigonometry, and Algebra.)

Mathematical Puzzles for Beginners & Enthusiasts by Geoffrey Mott-Smith, Dover Publications, Inc., 180 Varick Street, New York, N.Y. 10014 $1.75 Level: very bright intermediate -- upper grade. (Contains mathematical puzzles and riddles requiring application of arithmetic, elementary algebra, and some plane geometry.)

Mathematical Teasers (Paper back) Title No. 230 Barnes & Noble Everyday Handbooks by Julio A. Mira, Barnes & Noble Books, Division of Harper & Row. $1.75. Level: intermediate and upper grade; Availability: Krock & Brentano (Contains word problems and puzzles requiring the application of arithmetic.

Safe and Simple Electrical Experiments (Paperback) by Rudolf F. Graf, Dover Publications, Inc. 180 Varick Street, New York, N.Y. 10014. $2.50. Level: Intermediate and Upper Grade; Availability: Kroch & Brentano (The book contains 101 entertaining electrical experiments and projects in three major categories; static electricity (38 experiments), magnetism (32 experiments), and current electricity and electromagnetism (31 experiments.) The work is simply written and lends itself well to independent study activities. It is profusely illustrated and employs inexpensive materials usually found around the home.)

Some Materials Housed at Learning Resource Center
Glassboro State College
That May be Used with the Gifted

KEY:
K - Kit; usually multi-media
FSK - Filmstrip kit; contains records or cassettes along with filmstrips
T - Transparencies
G - Game; usually simulation
FSS - Filmstrip series
FLC - Flashcards
P - Pictures

1 - MATH

K1 - 61	Math Continuous Progress Laboratory (Series 600)
FSK 1 - 5	An Introduction to Computers
T1 - 14	Discovery in Geometry
T1 - 3	Geometry
K1 - 54	Cuisenaire (Geoboards)
K1 - 81	Unique Math Games

Curriculum Aids - 5

2 - SCIENCE

G 2 - 9	Queries 'N Theories
FSS 2 - 47	Learning About Conservation
K 2 - 25	Mapmaking Lab
K 2 - 21	Individualized Science Action Lab, Part 2
T 2 - 19	DCA Mechanics
FSK 2 - 50	Water Pollution
FSK 2 - 52	Air Pollution
K 2 - 40	Earth Science

3 - LANGUAGE ARTS

FLC 3 - 19	Reaction Cards
P 3 - 27	Photo Stories
K 3 - 213a	Story Sparkers
K 3 - 224a	Write On!
K 3 - 214	Information Fast

4 - READING

K 4 - 230	Rapid Comprehension Through Effective Reading
K 4 - 115	Law: You, The Police and Justice
K 4 - 114	Prejudice: The Invisible Wall
K 4 - 274	Reading for Understanding

5 - SOCIAL STUDIES

K 5 - 38	Human Relations Kit
G 5 - 9	Life Careers
G 5 - 41	Coalition
G 5 - 40	Hat in the Ring
K 5 - 14	Introduction to the Behavior Sciences--An Inquiry Approach
G 5 - 44	Consumer
G 5 - 10	Ghetto
FSK 5 - 169	Overpopulation
FSS 5 - 108	Transportation Today
K 5 - 51	Career Games
FSS 5 - 109	Our Constitution
FSK 5 - 116	America's Urban Crisis
FSK 5 - 82	World History: Three Great Eras of Mankind
K 5 - 34	Dollars and Sense: A Guide to Consumerism
FSK 5 - 187	The Japanese Americans
K 5 - 33	History of the Afro-American
K 5 - 9	The Me Nobody Knows
P 5 - 118	Alternative Cards
P 5 - 119	Written Language Cards - Affective
FSK 5 - 281	Legal Issues: What's Right
FSK 5 - 237	First Things: You Promised
FSK 5 - 178	Project Me: How Are You Feeling Today?
K 5 - 65	Creating Characterization
K 5 - 20	A Total Creativity Program for Individualizing and Humanizing the Learning Process
K 5 - 71	Reading, Researching and Reporting in Social Studies
G 5 - 77	Can of Squirms - High School

Materials for Parents of a Gifted Child

Parentspeak on Gifted and Talented Children - N/S-LTI-G/T*

The Gifted and Talented: A Handbook for Parents by Jeanne Delp and Ruth Martinson. N/S-LTI-G/T* Contains background information, suggestions for parents, and more resources for parents.

Gifted Child Society, Inc., 59 Glen Gray Road, Oakland, N. J. 07436

Northeast Exchange mailing list, EIC/South, P.O.Box 426, Pitman, N.J. 08071

* N/S-LTI-G/T refers to National/State Leadership Training Institute on Gifted and Talented, Office of the Ventura County Supt., Ventura, California 93001.

Research

Research Summary on Gifted Child Education by James Gallagher. Dept. for Exceptional Children, Gifted Program, State of Illinois, Office of Superintendent of Public Instruction.

Educating the Ablest: A Book of Readings on Education of Gifted and Talented Children by J. C. Gowan and Paul Torrance. F. E. Peacock Publishers, Inc. Itasca, Illinois, 60143.

Second Handbook on Research and Training by Robert M.W. Travers.

TEST/INSTRUMENT SUGGESTIONS**

The three books listed below will prove invaluable to administrators responsible for identifying gifted and talented students. Buros lists all tests in print, publishers, authors and cites references which discuss them. Hoepfner gives, in greatest detail, information on various tests. Lyman has authored a little book explaining tests in layman's terms.

Buros, O.K. Tests in Print. Highland Park, New Jersey: The Gryphon Press, 1974.

Hoepfner, Ralph and others. CSE-RBS Test Evaluations: Tests of Higher Order Cognitive, Affective and Interpersonal Skills. Los Angeles, California: Dissemination Office, Center for the Study of Education, Graduate School of Education, University of California, 405 Hilgard Avenue, 1972. $8.50

Lyman, Howard B. Test Scores and What They Mean. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971. $5.35

I. Intelligence

A. Individual:

Cattell Infant Intelligence Scale (ages 3-30 months)
Psychological Corporation

Concept Assessment Kit - Conservation (K-3)
Educational and Industrial Testing Service

Peabody Picture Vocabulary Test (ages 2.5 and over)
American Guidance Service

Stanford-Binet Intelligence Scale (ages 2 and over)
Houghton Mifflin Company

Vane Kindergarten Test (ages 4-6)
Clinical Psychology Publishing Company, Inc.

Wechsler Intelligence Scale for Children (ages 5-15)
Psychological Corporation

Wechsler Preschool and Primary Scale of Intelligence (ages 4-6.5)

B. Group:*

California Test of Mental Maturity
Mc Graw-Hill

*Should be used only for initial screening of students in the cultural/societal mainstream.

**from Gifted & Talented: An Identification Model, by Cornelia Tongue and Charmian Sperling, Div. for Exceptional Children, State Dept. of Public Instruction, Raleigh, N. C.

Cognitive Abilities Test (grades K-1, 2-3, 3-12)
Houghton Mifflin Company

Henmon-Nelson Tests of Mental Ability (grades K-2, 3-6, 6-9, 9-12) Houghton Mifflin Company

Kuhlmann-Anderson Test (grades K-1, 2, 3-4, 4-5, 5-7, 7-9, 9-12) Personnel Press

Lorge-Thorndike Intelligence Tests (grades K-13)
Houghton Mifflin Company

II. Achievement Tests

California Achievement Tests (forms for all grade levels)
CTB/McGraw Hill

Iowa Tests of Basic Skills (forms for all grade levels)
Houghton Mifflin Company

Metropolitan Achievement Tests (forms for all grade levels)
Harcourt, Brace and Jovanovich

SRA Achievement Series (grades 1-9)
Science Research Associates, Inc.

Stanford Achievement Test (forms for grades 1.5-9)
Harcourt, Brace and Jovanovich

Wide Range Achievement Test, Revised (ages 5-11, 12+)
Guidance Associates of Delaware, Inc.

III. Creativity/Divergent Thinking

Graves Design Judgment Test (grades 7-16)
Maitland Graves - Psychological Corporation

Guilford Creativity Tests for Children (specific IQ tests) (grades 4-6
Sheridan Psychological Services, Inc.
Iowa Tests of Music Literary (grades 4-12)
Bureau of Educational Research and Service

Torrance Tests of Creative Thinking - Verbal (grades 4-12)
Personnel Press

Torrance Tests of Creative Thinking - Figural (grades 1 - 12)
Personnel Press (use Frank Williams shorter key)

IV. Aptitude

Academic Promise Test (grades 6-9)
abstract reasoning, language, numerical verbal and non verbal
Psychological Corporation

Differential Aptitude Tests (grades 8-12)
Psychological Corporation

Guilford-Zimmerman Aptitude Survey (grades 9-16)
Sheridan Psychological Services, Inc.

S.O.I. Learning Abilities Test
S.O.I. Institute, ElSegundo, California
("this is not an intelligence test ... It is a test of specific learning abilities... to form the foundation cluster for a student's learning reading and arithmetic." It will help pick out the able student and is a diagnostic instrument which can be used individually or in groups. It is based on Guilford's Structure of Intellect factors.)

V. Self-Concept Tests*

Early School Personality Questionnaire ESPQ) (grades 1-3)
Institute for Personality and Ability Testing - 1602-04
Coronado Drive, Champaign, Illinois Copy 1966

How Do You Really Feel About Yourself? (HDYRFAY?) (grades 4-12)
Frank Williams
3760 Dallas Road, N.W.
Salem, Oregon 97304

Junior-Senior High School Personality Questionnaire (HSPQ) (g
(grades 7-12) Cattell and Porter
Institute for Personality and Ability Testing

The Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself)
Counselor Recordings and Tests, Box 6184 Acklen Station, Nashville, Tennessee 37212
Manual $1.00; Test Booklets (nonreusable) 1-99 - 23¢ each, 100+ - 20¢ each
Grades 5-12 copyright 1969

School Attitude Test - McCallon Learning Concepts, 2501 N. Lamar, Austin, Texas 78705. Elementary

The Self-Concept and Motivation Inventory (SCAMIN) What Face Would You Wear? Person-O-Metrics, Inc., Evaluation and Development Services, 20504 Williamsburg Road, Dearborn Heights, Michigan 48127 - copyright 1968/ Grades 1-3 (early elementary form) Grades 5-12 (intermediate form)

*Although these tests may be irrelevant for identification of giftedness per se, they can be extremely useful in assessing the affective needs of gifted children.

Self Esteem Inventory (SEI) by Coopersmith at the University of California at Davis - grades 5-12 (shorter than the Piers-Harris)

Modified SEI Grades 1-4

The Tennessee Self Concept Scale (TSCS)
Counselor Recordings and Tests
Specimen Sets - $1.50 - grades 5-12

VI. Divergent Feeling

Barron-Welsh Art Scale: A Portion of the Welsh Figure Preference Test (ages 6-18)
Consulting Psychologists Press, Inc.

Personality Rating Scale (grades 4-12)
Educators'-Employers" Tests and Services Associates

Mooney Problem Check List (grades 7-9, 9-12)
Psychological Corporation

VII. Biographical Inventory

Alpha Biographical Inventory (grades 9-12)
Institute for Behavioral Research in Creativity, Salt Lake City, Utah

Biographical Inventory, Form R (grades 9-12) keys for creativity in art and music, academics, and leadership
North Carolina Department of Public Instruction

VIII. Culture Free

Cooperative Preschool Inventory (ages 3-6)
standardized on disadvantaged children
Cooperative Tests and Services
Culture Fair Intelligence Test (ages 4-8, 8-14, 13-16) Cattell and Cattell - Institute for Personality and Ability Testing (IPAT)

Goodenough-Harris Drawing Test (ages 3-15) "Draw-a-Man-Test"
Harcourt, Brace and Jovanovich

Stallings' Environmentally Based Screen (S.E.B.S.)
This is a measure which can be used for initial screening of culturally different children. "SEBS is a quick supplement to existing instruments of intelligence testing; it is not intended to replace any existing instrument now available." It is especially useful with children who attend neighborhood schools.

Dr. Clifford Stallings
U.S. International University
San Diego, California